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MARKETDATA ENTERPRISES
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THE OFFICE MACHINERY INDUSTRY

A MARKETING, ECONOMIC, FINANCIAL AND TECHNOLOGICAL INVESTIGATION OF THE BUSINESS MACHINES MARKET AND ITS COMPETITORS

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THE OFFICE MACHINERY INDUSTRY

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INTRODUCTION AND STUDY METHODOLOGY

Marketdata has prepared the following business information report with the manufacturer, distributor/retailer, consultant, merger/acquisition candidate, and industry analyst in mind. Only the most pertinent and up-to-date information about office machines has been used. The study covers marketing, economic, technological, and financial aspects, and draws upon a wide variety of public and private sector information sources.

The reader will be able to utilize this report as a comprehensive planning and analytical tool, gaining insight into the industry's past, current and projected performance, growth, structure, strengths and challenges--both from a domestic and foreign viewpoint. Information is both **qualitative** and **quantitative**, and will be useful for the long-established manufacturer as well as first-time analyst.

The Bureau of the Census and U.S. Department of Commerce classify industrial (as well as retail, wholesale and service) sectors of the economy by SIC (Standard Industrial Classification) codes. **The main SIC code used to collect information about office machines for this report is 3579**--miscellaneous office machines. This SIC does ***not*** include products such as computers (3573), but Marketdata has searched other codes to find sales data for such machines as computer printers, calculators, and facsimile machines. Such Census information is invaluable, and is published every five years (years ending in a 2 or 7), as well as yearly, on a more limited scale, via the **Annual Survey of Manufactures.**

This "raw data" has been painstakingly collected and analyzed, in order to determine growth patterns, identify market segments, measure manufacturing plant performance, and to calculate industry averages or "yardsticks" by which producers can measures their own progress.

Sales figures in the Market section are based on Government surveys, and represent **sales at the MANUFACTURING/PRODUCER level**--value as it leaves the factory. Final price or value at retail or wholesale levels will be higher, as mark-ups are incorporated that reflect value-added services. Therefore, estimates of market size from trade journals, industry analysts, and other research firms may be substantially **higher** than these Government figures (see.Computer Abstracts section).

Marketdata's purpose is to consult as many sources as possible, to arrive at a "consensus" figure for market size and forecasted growth.

Continued.....

To rely on just one or several sources can be very misleading and inaccurate.

The following information sources were used for this report.....

* 1977 & 1982 Census of Manufactures (U.S. Census Bureau)
* Annual Surveys of Manufactures (1967-85)
* Bureau of Labor Statistics-Producer Price Indexes (annual, monthly)
* Census of Wholesale Trade
* Dept. of Commerce, County Business Patterns
* Dept. of Commerce Exports, by Product, by Country of Destination, and Imports by Product, by Country of Origin publications
* Current Industrial Reports (annual editions-Computers & office Equipment, Electronic & Associated Products, Communications Equip.)
* Dun & Bradstreet directories
* Standard & Poors directories, stock sheets
* Manufacturers' product catalogs and advertisements
* Trade Associations
* Dialog/Lockheed Predicast Database--U.S. Forecasts file
* Trade Journals/Magazines: Electronics, Electronic News, Administrative Management, Appliance (and their editorial staffs)
* Marketdata proprietary files and databases
* Special one-time reports by various consulting/research organizations

EXECUTIVE OVERVIEW - THE OFFICE MACHINERY MARKET

Marketdata estimates that the United States market for office machines will be worth $19.7 billion in the current year-1987. This is an 11.7% average annual growth rate from the $10.83 billion level estimated for 1980. Marketdata's forecast for 1992 is 7.1% average yearly gains, to $26.7 billion.

The market, as defined in this report, is comprised of 20 different office machine markets, as follows: computer printers and plotters, typewriters, word processors, photocopy machines, duplicators, facsimile machines, time recorders/stampers, electronic calculators, dictating machines, check handlers, pencil sharpeners, staplers, telephone answering machines, and mailroom machinery-forms handlers, collators, mailing machines, letter & envelope handling machines, addressing machines, plus related parts and attachments.

Following is a breakdown of the size of these markets, estimated for 1987 and forecasted for 1992.....

Office Machine	1987 Sales (Estd.) ($ Millions)	1992 Sales (Forecast) ($ Millions)
Copiers	$10, 217	$12, 330
Computer Printers	2, 940	5, 360
Typewriters & word Processors	2, 120	2, 700
Parts & Attachments	1, 320	1, 980
Mailroom Machines-all types	663	892
Electronic Calculators	555	670
Facsimile Machines (FAX)	400	696
Answering Machines	386	550
Computer Plotters	359	574
Dictating Machines	315	402
Check Handling Machines	133	179
Time Recorders/Stampers	66	85
Total:	$19, 733	$26, 718

This is a dynamic market-one characterized by a diversity in machinery and technologies--older mechanical machines which have not changed much in 15 years (time stampers) versus those on the leading edge of new

Continued.....

electronics technology (FAX machines). Yet, they all fall into the overall classification of office machinery, whose job it is to make office workers more productive and efficient.

It is also a market, like so many other U.S. sectors, that has been aggressively attacked by foreign competitors, the Japanese in particular. As an example, total **EXPORTS** of office machinery by U.S. producers were valued at $1.2 billion in 1986 (or about 6.6% of domestic sales). By contrast, however, **IMPORTS** of office machines were estimated to total $3.38 billion that year--for a net "balance of trade deficit" of nearly $2.2 billion. Japanese companies accounted for 72% of the value of these imports. The most heavily imported machinery groups were: copiers-$1.317 billion, typewriters-$614 million, computer printers-$460 million, parts for machines-$382 million, and calculators-$315 million.

Some relief for U.S. companies may come from two avenues: 1) the appreciation of the yen vis-a-vis the dollar, making foreign goods more expensive, and 2) the current ban on Toshiba products. On June 30, 1987, the Senate approved, 92 to 5, an amendment to the pending trade bill that would impose a ban of from two to five years on imports of goods produced by Toshiba. This was in response to Toshiba's sale of sensitive military technology to the Soviet Union. Toshiba's U.S. sales of consumer products, copiers, computers, semiconductors, etc. exceed $1 billion a year. It would be a serious blow to the company. Some distributors are already shunning their products. But, there are many more Japanese firms waiting in the wings, that are formidable competitors in many office machinery segments.

The office machinery market is healthy, and characterized by vigorous competition. It benefits from several underlying economic/demographic trends in the U.S. economy. The service sector is growing, as well as the number of people starting their own small business. Existing companies are trying to automate as much as possible, to increase white collar productivity and their "competitive edge". Sometimes this edge is in the form of response time and customer service--a boom for such machines as FAX (instant communications that bypass a slow and unreliable postal system).

A study recently released by SRI International of Menlo Park, CA predicted that by 1990 there will be more computer terminals in American offices

Continued.....

than there are electric typewriters today. The number of such terminals will jump by nearly 12 times, with the result that one out of four white-collar workers will operate an electronic work station.

Electronic Information Systems recently estimated that **the four largest firms in the office machine market captured 49% of total sales in 1979,** with the industry leader being Pitney Bowes. This estimate excludes: computers (and printers/plotters), copiers, and typewriters. Marketdata does agree that Pitney Bowes is still the leader, but with the onslaught of Japanese competition in recent years **we believe that the top four firms now capture 33% of the market.**

We have identified 114 companies, mostly American, that produce various office machines, plus another 230 or so that are in the computer printer market, bringing the **total number of competitors close to 350.** The U.S. Census Bureau reported that 204 companies operated 232 manufacturing plants in 1982. This includes ***only*** SIC code 3579-miscellaneous office machines (not incl. computers, printers, copiers).

Some segments are more vulnerable to foreign competition than others, and choose to focus on narrow "niches" to stay afloat. **Xerox** has narrowed its office automation focus to the electronic publishing segment, building on the company's strength in reprographics and laser printers. **Pitney Bowes** has long ignored more glamorous (and risky) segments in favor of building a solid reputation in mailing/shipping equipment, dictation systems, copiers and facsimile. It has experienced enviable growth in mature markets by concentrating on strong management, customer service, new products, and product improvement.

Aggressive overseas competition makes copier manufacturers unusually sensitive to international economic trends. Imports of reprographics and micrographics equipment, reports Value Line, surged 35% during 1986 as Japanese companies stepped up a drive to penetrate the profitable high-volume copier segment. But the imposition of duties on Japanese firms by the European Economic Community has made American companies more competitive in the European market.

As for **the structure of the office machinery market**, there were 38,800 workers employed by U.S. producers in facilities across the nation in 1985. Shipments by these plants were valued at $5.38 billion, at the

Continued.....

factory level (incl. SIC 3579 only--not copiers, FAX, answering machines, computer printers/plotters). This was a 21% gain over the prior year. Production plants are mostly small, as 56% employed less than 50 workers. Large plants (500+ workers) accounted for 56% of the total value of shipments.

Operating costs (payroll & materials) have typically accounted for 60-65% of each sales dollar, but this has dropped recently. New capital investment is strong, $256 million in 1985. Fully 88% of this was allocated to "new machinery & equipment", as opposed to 12% for "new buildings" (bricks and mortar-plants). **Labor productivity** has been excellent in recent years. The "value added/wage ratio, a statistic that measures output to the cost of attaining it, rose to a new high of 9.5 in 1985.

A low-inflation environment, plus heavy capital spending by producers, seems to be paying off, since overall prices of all office machines as a group rose only 1% in 1986. Some machines rose as much as 9.8%, but these areas were few and far between. Competitive market pressures, domestic and foreign, should keep price increases minimal in the near future.

Production plants in this industry had a **"Specialization Ratio"** of 81%, meaning that 81% of their sales were derived from office machines (their ***primary*** product), and 19% from the sale of products ***other*** than office machines. The **"Coverage Ratio"** was 87%, meaning that 87% of the value of office machines shipped were shipped by ***this*** industry's plants, and 13% by plants in **other** industries. As of 1984, there were 2,454 manufacturing plants nationwide, producing **both** computing machinery ***and*** office machinery. 232 plants were classified in this industry alone (SIC code 3579). Of these 2,454 plants, 919 were located in the West, 575 in the Northeast, and 373 in the Midwest.

Following is a ranking of the various office machinery market segments, by the 5-year percent increase expected in sales over the period 1987-1992.....

Computer Printers	82.3%
Facsimile Machines	74.0
Computer Plotters	59.9
Telephone Answering Mach.	42.5
Check Handling Mach.	34.6

Continued.....

Mailroom Machines	34.5
Time Recorders/Stampers	28.8
Dictation Machines	27.6
Typewriters & Word Processors	27.4
Electronic Calculators	20.7
Photocopiers	20.7
Duplicating Machines	15.8

Some machines enjoy a robust consumer end-use market as well as in the office, such as calculators, answering machines, and just now emerging--FAX machines. Business Week August 3, 1987) reports that shrinking prices are creating a consumer market for facsimile machines. They quote **CAP International**, a Massachusetts market researcher, as expecting that some 295,000 faxes will be sold this year. Negligible 18 months ago, small business, home-office, and consumer purchases will be nearly 15% of the market in 1987, says **Dataquest.** Rising demand for Faxes has grown the ranks of producers sixfold since 1982, to about 30 now. Increased competition has driven down prices by 15% yearly. Late in 1986, Canon, Sharp, Brother and Panasonic had introduced "personal" fax machines. Canon was very successful in the personal copier market with this same strategy, helping it vie for the top spot in the copier market with Xerox. A combination fax, telephone, answering machine and copier retails for only $1,495. Sharp executives predict that about one-third of U.S. workers will be working either part-time or full-time out of their homes by the year 2000.

THE COMPUTER PRINTER & PLOTTER MARKET

Computer printers and plotters, it can be argued, might be considered part of the EDP system itself, as peripheral devices. As such, one may feel that this equipment should not be grouped with other office machines such as copiers, dictating machines, etc. Marketdata is of the opinion that since printers and plotters are used to process and produce text and data (such as typewriters and calculators) these machines rightly belong in this group of equipment that constitutes the "automated office".

The most basic dividing line in printer types is **impact** versus **non-impact** types. Within the impact grouping there are line and serial printers--dot matrix and fully-formed character kinds. In the non-impact area are included the more expensive, high-tech devices such as: ink jet, thermal, page, electrostatic and laser printers. One could also segment the market by speed/lines per minute or CPS-characters per second (high speed, medium, slow).

The U.S. Department of Commerce tracks sales of computer printers by **domestic** companies but has not as yet tracked **imports** (although they plan to do so in the near future). **By 1985, U.S. manufacturers' sales reached $2.29 billion**, down about 2% from 1984. The 1983-84 period was one of very strong growth, as the market expanded 46%. Over 808,000 units were reported shipped during 1985, down 26% from the 1,100,000 in 1984. **Long-term growth** in sales volume has advanced at an average annual rate of 36.2% from 1975-85, while **short-term growth** from 1980-85 averaged 16.5%.

Electronics, in its January 1987 "U.S. Market Report", estimated the 1985 market for printers to be worth $3.85 billion. **Comparing Electronics' estimate to Commerce Department figures, imports would then have amounted to $1.56 billion, or 40% of the total market.** This seems to make sense, considering the great number of Japanese competitors active. Electronics estimates the market to grow 13.6% during 1986 and 14.3% in 1987, with "slow serial printers" posting the fastest rate of growth. Following are Electronics' estimates of printer market size from 1985-87:

See next page.....

	1985	1986 ($ Millions)	1987
Total Printers	$3,853	$4,379	$5,007
High speed line (1000 lpm+)	468	487	510
Medium spd. line (100-1000 lpm)	1,270	1,429	1,615
Slow serial (und. 100 lpm)	2,115	2,463	2,882

The 1985 versus 1987 percent distribution of the market, using the above figures, is as follows.....

	1985	1987
High speed line	12.1	10.1
Medium speed line	32.9	32.2
Slow serial	54.8	57.5

One can readily see that slow serial printers are gaining market share while high speed line printers are losing ground.

Marketdata estimates that U.S. producers' sales of computer printers will reach $2.94 billion by 1987 (14% average yearly growth from 1985-87). For 1992, we expect 16.5% average annual increases, to $5.36 billion. To these figures one must add imports to arrive at the true value of the market. Assuming a steady 40% share for imports, this would bring the value of the market to $4.12 billion in 1987 and $7.5 billion by 1992.

Exports of computer printers by U.S. producers rose from $188 million in 1979 to $461 million by 1985. Foreign trade analysts at the Commerce Department report that exports totalled $427 million during 1986, and 265,000 units were shipped abroad. Exports therefore represented about 16% of domestic sales in 1986.

Continued.....

In an October 1984 report of the computer printer market Marketdata estimated that over 230 companies were active competitors. Many of these are foreign. Looking at the supplier list in the back section of this report, the printer roster reads like a "who's who" of Japanese firms, including: Canon, C.Itoh, Citizen America, Epson, Fujitsu, Juki, Okidata, NEC, Panasonic, Ricoh, Sanyo, Sony, Toshiba and more. Many U.S. companies operate manufacturing plants overseas, and a great deal of joint ventures, acquisitions, and technology sharing has taken place and will continue as firms seek to maximize efficiency and derive the lowest possible costs to survive in this intensely competitive marketplace.

The big issue regarding printers today is, of course, **desktop publishing.** Price tags of **laser printers** have come down (to the $1500-2000 range) as power and capabilities of personal and microcomputers have increased. This has made it economically feasible for many small businesses, as well as personal computer users at home, to produce "letter quality" flyers, brochures, newsletters, and camera-ready artwork. The latest development is **color** capability.

Although color dot matrix and ink jet printers are now available at reasonable prices, the quality is not quite what desktop publishers demand. Laser printer makers see color as an area with large potential and are investing big R & D dollars in it. Users, though, are questioning whether they really ***need*** color and are not willing to spend more than 20% more than black & white for it. International Resource Development, a Connecticut consulting firm, estimates that color printers currently account for 8% of total printer unit sales and 5% of revenues. Unit sales are expected to rise five-fold by 1991.

Many Japanese companies are considering manufacturing sites in the U.S. and Europe to ease trade tensions. Epson set up a printer facility in July 1986 near Portland, OR, which currently makes 20,000 dot matrix printers monthly. Epson plans to locate manufacturing plants in other nations as well, a dot matrix plant in England was planned for June of this year. This is in addition to its 3-year-old French plant that turns out thermal printers at the pace of 5,000-6,000 units monthly. Epson's future development will include laser printers and color video printers.

Alps Electric will start operating a new printer/office equipment plant in Korea in September, and has allocated $85 million for Korean investments. Korea now accounts for 95% of Citizen's mini-printer production. Citizen is very concerned about European Economic Community anti-dumping measures, and might locate a plant in Britain within the year.

THE OFFICE MACHINERY INDUSTRY
U.S. MANUFACTURERS' SALES OF COMPUTER PRINTERS

	VALUE OF SHIPMENTS ($ THOUS.)	ANNUAL % CHANGE	UNIT SHIPMENTS	ANNUAL % CHANGE
1975	$497,048			
1976	599,766	20.7	170,941	
1977	826,096	37.7	230,960	35.1
1978	748,337	-9.4	231,505	0.2
1979	1,005,698	34.4	318,188	37.4
1980	1,258,840	25.2	341,745	7.4
1981	1,813,387	44.1	529,146	54.8
1982	1,550,582	-14.5	495,824	-6.3
1983	1,921,602	23.9	888,176	79.1
1984	2,344,487	22	1,100,128	23.9
1985	2,297,228	-2	808,288	-26.5
ESTIMATE				
1987	2,938,150	14*	760,000	-3*
FORECAST				
1992	5,362.0	16.5*	---	---

* Average annual rate

SOURCE: U.S. DEPT. OF COMMERCE, CURRENT INDUSTRIAL RPORTS, MARKETDATA CALCULATIONS, ESTIMATES, FORECASTS

THE OFFICE MACHINERY INDUSTRY

COMPUTER PRINTER SUPPLIERS—DOT MATRIX TYPE
BY MODEL NUMBER & PRICE

COMPANY	MODELS PRODUCED	PRICE
ALPHACOM	AERO	$249
APPLE	IMAGEWRITER	595
AT & T	477, 478	1695, 985
BROTHER	M-1409, M1509	479
BROTHER	2024L	1295
CANON	A-60	649
CENTRONICS	358 PRINTSTATION	2895
CITIZEN AMERICA	120D, MSP-15	269, 599
C. ITOH	C-310 XP, C-315 XP	649, 819
C. ITOH	PROWRITER C-17 RELIANT	1295
DATA GENERAL	6215	2950
DATAPOINT	9623	2400
DATAPRODUCTS	8070	1999
DATASOUTH COMPUTER	DS 220	1695
DIGITAL MATRIX	FORM WRITER 9/132	1270
DYNAX	DM 2015	559
EPSON	LQ-2500	1595
FACIT	3350	1295
FLORIDA DATA	300	3495
FUJITSU AMERICA	DX2100, 2400	545, 1195
GENERAL BUS. TECHNOL.	5227FA	1995
GENICOM	1000-1025	699
HERMES	616 PROFESSIONAL	2800
HEWLETT-PACKARD	2934-A	3995
IBM	QUIETWRITER II	1595
IMTEC	7000	3995
INFOSCRIBE	1000, 143X	1390, 3198
JUKI	5510-C	650
MOTOROLA	PT 235	1450
NEC	PINWRITER P5XL	1695
OKIDATA	MICROLINE 292, 182	749, 399
OKIDATA	MICROLINE 294, 2410	1499, 2395

CONTINUED.....

THE OFFICE MACHINERY INDUSTRY

DOT MATRIX COMPUTER PRINTER SUPPLIERS (Continued)
BY MODEL & PRICE

COMPANY	MODELS PRODUCED	PRICE
OLIVETTI	DM280	595
OLYMPIA	NP 80, NP 136	549, 699
OUTPUT TECHNOL.	700-E	1995
PANASONIC	KX-P1595, KX-P1092	949, 499
PANASONIC	KX-P1080	319
PHILLIPS INFO. SYS.	GP-300	2690
PRINTONIX	PERSONAL LINE PRINTER	795
SPERRY	115, 5	695, 324
STAR MICRONICS	NB-15	1449
TAB	M-184, M24P/M25S	1095, 695
TAB	M22P/M23S, M20P/M21S	499, 299
TANDY	DMP/430	899
TELEX COMPUTER PRODS.	387	6000
TEXAS INSTRUMENTS	880 AT	2195
TOSHIBA	P351C, P341E	1749, 999
TOSHIBA	P321	699
WANG	5577	5975
XEROX	COMPANION 34LQ	1399

DAISYWHEEL PRINTERS

ALPHACOM	ALPHA PRO 101	499
APROTEK	1120	749
AT & T	455	1049
BROTHER	HR-20, HR-25	599, 1449
BROTHER	HR-35	999
CITIZEN AMERICA	PREMIERE 35	2695
C. ITOH	F10-55, D10-40	2400, 2495
DATA GENERAL	6321	499
DATAPOINT	9611/1261	899
DATA PRODUCTS	DB 55 SQ	695
DYNAX	DX21	1495
EPSON	35	3695

Continued.....

THE OFFICE MACHINERY INDUSTRY

DAISYWHEEL PRINTER SUPPLIERS (Continued)
BY MODEL & PRICE

COMPANY	MODELS PRODUCED	PRICE
FACIT	D-2000	1995
FUJITSU AMERICA	SP 320 E	1395
GENERAL BUS. TECH.	5206 WP	1695
HARRIS-LANIER	1600L	1899
JUKI	6500	549
NEC	8850	659
OLIVETTI	DY 800	419
OLYMPIA	ESW 1000	1690
PANASONIC	KX-P3151	1895
PANASONIC	KX-P3131	1995
PHILLIPS INFO. SYS.	P-40	995
PRIMAGES	100	599
QUME	SPRINT 1190	449
RICOH	RP3400Q	300
ROYAL BUS. MACHINES	OFFICE MASTER 2000	949
SANYO	PR 5200	400
SILVER REED	EXP 420, EXP 600	280, 1995
SONY	2440	$1795.0
SPERRY	21, 31	695, 2100
STAR MICRONICS	Powertype	499
TELEX COMPUTER	286-F	5750
XEROX	Diablo Adv D80, 635, Adv D25	2195, 1485, 745
INKJET		
CANON	PJ-1080A	$699.0
DICONIX	150	479
SIEMENS INFO. SYS.	PT 88, PT 89	699, 849
STAR MICRONICS	STX-80	199
TELEX COMPUTER	851	750
XEROX	4020	1495

SOURCE: ADMINISTRATIVE MANAGEMENT MAGAZINE, OCT. 1986

THE COMPUTER PLOTTER MARKET

The U.S. Department of Commerce reported domestic sales of computer plotters of $246 million during 1985, a 2.2% gain over the prior year. Sales volume has been over the $200 million mark since 1981, when volume of these machines jumped sharply. In 1985, over 30,300 units were shipped by U.S. producers.

Electronics, in its January 1987 "U.S. MARKET REPORT", estimates the plotter market to be sustantially larger than the official Government figures, **$712** million in 1985. They forecasted a 26% gain to **$897** million in 1986 and a 20% increase to **$1.076** billion by 1987. Like computer printers, a closely related machine in terms of end-users and applications, heavy imports are probably involved, accounting for the major difference between Electronics' estimates and the Commerce Department survey. The ***exact*** amount of these imports is not known, but they should be in the range of $465 million, or nearly two-thirds of the market.

Consequently, Marketdata estimates that ***U.S. producers'*** sales of plotters will reach **$359 million in 1987, and hit $574 million by 1992.** Growth should be strong, but perhaps not as strong as forecasted by Electronics magazine. We feel that **growth through 1992 will average 12% per year.** After all, sales grew by only 2.6% per year (average annual rate) from 1981-85. In addition, competitive pressures from the large number of producers in the market should hold down prices--so market expansion (in sales dollars) will have to come from "real" or unit increases.

More so than printers, plotters are utilized by the scientific community for more graphics, tables, charts, etc., rather than heavy word processing/text applications.

Some **competitors** in the plotter market include: Mannesmann Tally, Hewlett-Packard, Gerber Scientific, CalComp., Versatec (a Xerox company), Datametrics Corp., and Astro-Med Inc. The most significant players in the market are probably Hewlett-Packard and Gerber Scientific--both of which are heavily invested in serving the needs of the scientific community, not only in plotters but calculators and other products.

Gould (Rolling Meadows, IL) used to be in the field but put its graphics plotter business up for sale in January of 1986. This operation was located in Mitcham, England, employed 90 workers, and was engaged in the manufacture of X-Y plotters. The operation was part of Gould's Recording

Continued.....

Systems Division located in Cleveland.

Some plotters' price tags are quite high. Versatec, in September of 1985, introduced two electrostatic models capable of plotting on paper 24 inches and 36 inches wide. The former was priced at $49,800 and the latter at $72,200. Many models are not that expensive, though. Axion was marketing a 3-pen $399 plotter for use with personal computers a few years ago. The most expensive plotters are those with multiple-pen, wide printing ranges, geared toward scientific/engineering users in universities, research laboratories, and large corporations.

THE OFFICE MACHINERY INDUSTRY
U.S. MANUFACTURERS' SALES OF COMPUTER PLOTTERS

	VALUE OF SHIPMENTS ($ Thous.)	ANNUAL % CHANGE	UNIT SHIPMENTS	ANNUAL % CHANGE
1977	$34,449		4,997	
1978	41,052	19.2	4,926	-1.4
1979	43,570	6.1	7,808	58.5
1980	74,110	70.1	9,888	26.6
1981	223,166	201.1	19,084	93
1982	246,124	10.3	15,520	-18.7
1983	232,210	-5.3	25,526	64.5
1984	240,755	3.7	27,675	8.4
1985	246,016	2.2	30,323	9.6
ESTIMATE				
1987	358.7	22.9*	36,700	10.5*
FORECAST				
1992	574	12.0*	52,100	8.4*

* Average annual rate

SOURCE: U.S. DEPT. OF COMMERCE, ANNUAL CURRENT INDUSTRIAL REPORTS, MARKETDATA CALCULATIONS, ESTIMATES, F

THE TYPEWRITER AND WORD PROCESSOR MARKET

Marketdata estimates that the market for typewriters and word processors grew 7.3% to $1.99 billion during 1986, and will rise 6% to $2.12 billion during 1987. Our longer term forecast is for 5.5% annual gains, to a level of $2.7 billion by 1992. Sales of these machines topped $2 billion in 1981, then dropped sharply, by 55% in 1982 alone, to $1 billion. Sales volume rebounded and has stayed near the $2 billion mark since 1984. Historically, average annual growth from 1977-85 has been 11.2%, but this rate is sure to slow up as percent changes are calculated off a higher sales volume base, in the face of stiff competition, and in view of minimal price increases.

Exports of typewriters and word processors grew from $102 million in 1979 to $149 million by 1985 (7.7% per year). **Imports** outpaced exports by a ratio of 3.5 to one in 1985 ($349 million), 7.3 to one in 1984. And, in 1986, imports of typewriters and parts were estimated at **$614 million**. Imports of word processors exceeded exports for the first time in 1985 ($58 million to $50 million).

This market is undergoing a transformation, as new **electronic** typewriters (ETs) representing the third generation of typing machine are selling briskly. There will always be a demand for **manual** typewriters, for such uses as the Army (which needs typewriters that can operate in the field without electricity) and for "diehards" that just don't like new technology. But, the same is not true of **electric** models, which are fast being rendered obsolete by ETs. In fact, only one kind of electric typewriter is still made in the U.S.--the IBM Selectric.

More than two dozen companies are fighting for market share, including such players as: IBM, Xerox, Adler-Royal, Canon, Swintec, Panasonic, Minolta, Lanier, Hermes, Olivetti, Remington Rand, and TEC America.

Appliance magazine estimates that 1.4 million ETs will be sold during 1987, and 9,000 manuals. These are termed "unit sales for replacement". Appliance also estimates the **average life** of an ET at 8 years. Office Equipment estimates the following unit sales of ETs, by type:

Full size, 10K memory	68,000 units
Full size, 8K "	486,000
Full size, small memory	642,000
Compact & portable	488,000
Total:	1,684,000

Continued.....

Camarro Research, a Fairfield, CT research firm, has developed the following estimates of **unit sales** of electric vs. electronic typewriters models sold in the United States.....

	Electric	Electronic	Electronic As % Of Total
	(Thous. units)		
1978	950	36	3.6
1979	900	92	9.2
1980	850	138	13.9
1981	750	218	22.5
1982	600	363	37.6
1983	525	525	50.0
1984	325	920	73.8
1985	250	1,452	85.3
1986 Est.	150	1,780	92.2

IBM is estimated to have captured 29% of the ET market during 1985, selling 415,000 units. Electronic typewriters are expected to become more and more sophisticated, with larger amounts of memory. They will soon reach the point of having so many features added that it will be hard to distinguish them from word processors.

Smith Corona is the main American player in the home and small office typewriter market. The firm has a large share of the 2.2 million **portable** typewriters sold each year in the U.S. Their electronic models sell in the $200-500 range, while their electric portables retail for $150-180. Some industry analysts have forecasted the demise of electric models by late 1987. But, IBM Selectrics may last longer than that, just from the inertia built up by the large installed base of these models in U.S. offices. People are comfortable with them and are resistant to change from a tried and true, reliable machine.

Dataquest reported the following **share of market** estimates for ETs as of 1985:

IBM	28.8%	Panasonic	6.8
Xerox	10.8	Brother Intl.	6.8
Adler-Royal	10.2	Olympia	5.2
Canon	10.2	Silver-Reed	5.0
Swintec	7.2	Sharp	3.4
		Others	5.6

Swintec and Panasonic were expected to have gained market share.

Some of the important **product features** and new **technological developments** taking place include the following.....

* Spelling correction software containing 60-80,000 words has become the premier software on ETS.
* An abbreviation feature on Sharp models allows users to use certain shorthand symbols to print them out as full phrases when accessed.
* 25K of memory is available on Panasonic and Harris/Lanier models, which can provide features such as word wrap, global search, scrolling, copy edit, etc.
* "Modular" typewriters, cutom-designed machines that enable secretaries to add functions to their existing typewriters, are appearing. Panasonic is credited with introducing modularity via its KX-700m unit.

Venture Development Corp. of Natick, MA expects ET sales to hit $1 billion by 1986, $1.3 billion by 1987, $1.52 billion by 1988, $1.71 billion by 1989, and $1.86 billion by 1991. The company expects that the office market for basic, mid-range and high-end ETs to stabilize during 1987, and trend downward after this year. At the high end, Venture Development predicts a drop of more than 3% per year. Increased competition is forecast in the ET market, with a "shakeout" likely. Weaker players such as Casio, Juki, Teal, 3M and Towa have already become victims and exited the market. One bright spot seen is that of CRT display ETs.

WORD PROCESSOR PRINTERS

Current Status:

- Significant activity in Japan.
- Fits Japanese requirements:
  - Matrix printer
  - Quiet
  - Prints on Japanese paper
- 97 Variations of typewriters or printers have been released by:
  - NEC
  - Sanyo
  - Matsushita
  - Toshiba
  - Hitachi
  - Fujitsu
  - Hattori Seiko
  - Seiko Epson
  - Casio
  - Canon
  - Sanyo
  - Sharp
  - Silver
  - Sony
  - Brother
  - Minolta
  - Ricoh
- U.S. market demands higher quality print on rough bond paper
- Japanese printer manufacturers recognize U.S. market expectations
- R & E continuing on ribbons, printheads and printers
- Only Oki 10/20 has had success in the U.S.

THE OFFICE MACHINERY INDUSTRY

U.S. MANUFACTURERS' SALES OF AUTOMATIC TYPING & WORD PROCESSING MACHINES

($ Millions)

	TOTAL	COMPOSING TYPEWRITERS	PRINTER ORIENTED EDITING TYPEWRITERS	SHARED TEXT EDITING SYSTEMS	VIDEO DISPLAY EDITING TYPEWRITERS
1977	982.2	---	---	---	---
1978	1, 179.8	-----	---895.7*--	47.5	269.9
1979	1, 567.1	949.7*	218.9	33.6	364.9
1980	1, 872.0	1, 032.2	281.1	64.6	494.2
1981	2, 181.9	1, 172.5	394	53.3	562.1
1982	988.5	NA	NA	NA	NA
1983	917	NA	NA	NA	NA
1984	1, 869.1	D	D	D	698.5
1985	1, 861.5	D	D	D	607.9
ESTIMATE					
1987	2, 120.0	6.7+			
FORECAST					
1992	2, 700.0	5.5+			
AVG. ANNUAL % CHANGE 1977-85	**11.2**	---	---	---	**15.6**

* Incl. std. portable & nonportable electric & nonelectric types.

NA - Data not available.

D - Data withheld to avoid disclosure of individual company sales.

\+ Average annual rate

SOURCE: U.S. DEPT. OF COMMERCE, CURRENT INDUST. REPORTS MARKETDATA ESTIMATES, FORECASTS, CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

SUPPLIERS OF ELECTRONIC TYPEWRITERS, BY MODEL

COMPANY	MODELS PRODUCED
ADLER	AR 310, 320, 1020, 1035/C, METEOR II SATELLITE III, SATELLITE III/C, 805, 810
BROTHER	EM 501, 511, 701, 711, 811, 701fx, 721 fx, 811 fx, 1000, 401, 411
CANON	AP 200-2, 200X-2, 300-2, 350-2, 400-2, 500-2, 550-2
CASIO	CW-11, 21, 30, Spell Check, CW-500
LANIER	ViewWriter 24, VW 24 Memory Card
HERMES	H-66, 61, 60, 35
I B M	Actionwriter 1, Quietwriter 7, Wheelwriter 5, Wheelwriter 3, Wheelwriter Sys./40 Quietwriter Sys./40
MINOLTA	EW251, 251F, 401, 501, 201
OLIVETTI USA	ET 116, ETV 240, ETV 250, CX 880, ET 109, ET 112, ETV 260
OLYMPIA	ES 95, Mastertype D, Standard 210, Professional 220, Supertype 230, Startype, Mastertype, Standard 200, Supertype 240, Carrera, XL 120, WX 121, Report Electronic, Compact S, Olytext 20
PANASONIC	RK-T35, RK-T40, RK-P200C, RK-P400C, KX-W50TH, KW-W60TH, KX-E500, KX-E508, KX-E601E, KX-E700M, KX-E 708

Continued.....

THE OFFICE MACHINERY INDUSTRY

ELECTRONIC TYPEWRITER SUPPLIERS, BY MODEL
(Continued)

COMPANY	MODELS PRODUCED
PROTYPE	Display Typewriter
REMINGTON RAND	1550, 1750
ROYAL	410, 420, 5020, 5035, Satellite III, Meteor II, Satellite III/C, 505, 510
SHARP	ZX-515M, ZX-507, ZX-420, ZX-405, XQ-380A, XQ-370A, XQ-345, XQ-325, XQ-320
SILVER REED	EX 30, 34, 50, 60, 200, 78FD, EZ 50, 30, 20
SWINTEC	1146 CM, 1186 CMP, 8000, 8011, 8012, 8014-S, 8016, 1186 CMP SELECT, 8014 KSR
SYNTREX	ET 500
TEC AMERICA	TW 5000, 1200S, 1000S, 1250, 1300F, 4000
XEROX	6010, 6015, 627, 630, 645 S, 645E, 6020

SOURCE: ADMINISTRATIVE MANAGEMENT MAGAZINE, JAN. 1987

THE PHOTOCOPY MACHINE MARKET

Copy machine shipments and information regarding the size of the market are tough to come by, since this data is not tracked on a regular basis by the Commerce Department. They claim to have survey problems with the few large players in the market divulging their sales. Several other trade associations and trade journals were contacted, to no avail as well.

However, CAP International, a Marshfield, Massachusetts research firm specializing in the printing/graphic arts industries, has developed 1984-1991 forecasts of the copier market. CAP International did ***not*** contact manufacturers directly, believing that they are usually over-optimisticly biased with their forecasts. But, in speaking to several of the large copier companies in the course of their research, CAP was led to believe that these forecasts were very close to internal estimates made by the producers themselves, lending credibility to them.

CAP International believes that the leaders in the copier market are:

1) Canon
2) Xerox
3) Ricoh
4) Minolta
5) Mita
6) Panasonic

Canon's number one rank is due primarily to the success of its personal copier line. However, if one considers rental/leasing income, Xerox would assume the number one position.

Following are CAP International's estimates and forecasts of the copier market.....

(Plain Paper Copiers, All Sizes, Exc. Hand-Held Types)

	Net Placements (No. of Units)	Value of Equipment Sales* ($ Billion)
1984	884,000	$8.136
1985	1,052,000	8.937
1986	1,086,000	9.510
1987	1,176,000	10.217
1988	1,250,000	10.588
1989	1,321,000	10.970
1990	1,391,000	11.296
1991	1,463,000	11.634

Continued.....

*Note: Final price to end-users, assumes that 20% of the market equals service and supplies.

CAP International forsees 6.1% compound annual growth in unit sales (net placements) and 4.1% annual growth in dollar volume. Over the short term, another round of price increases in the range of 5-10% is expected soon by 7-8 manufacturers. CAP's estimates of the Hand-Held copier market segment, a distinctly different market are as follows:

1986	10, 000 units
1987	30, 000
1988	50, 000
1989	70, 000
1990	90, 000
1991	110, 000

Panasonic, Silver-Reed and Sharp are the key players in this hand-held copier market.

In addition, Electronics magazine, in its January 8, 1987 "1987 U.S. Market Report", supplied the following information about recent sales of copying equipment:

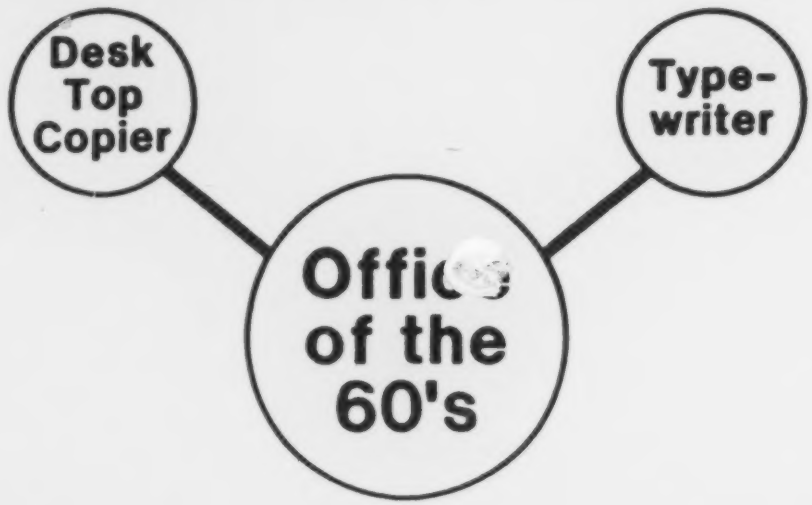
Sales ($ Million)	1984	1985	1986	1987
	$4,090	$4,525	$4,920	$5,314

These figures imply 10.6% growth in 1985, 8.7% in 1986 and 8.0% for 1987, and are obviously a lot lower than CAP International's numbers.

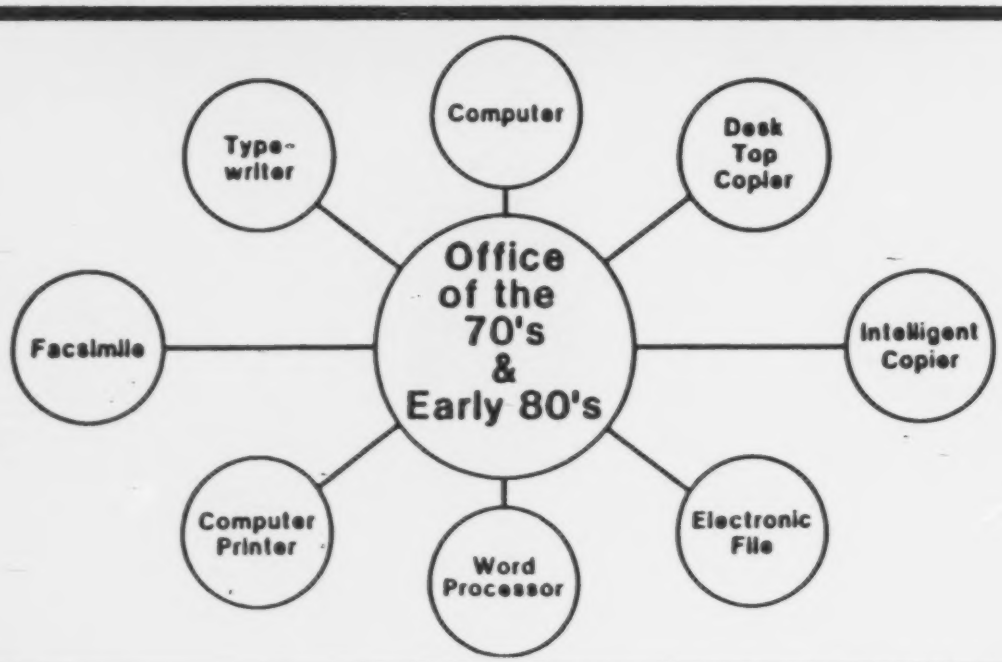
One need only look at the copier supplier list in the back of this study to see that the market is largely supplied by imports. Of the 21 suppliers listed in Administrative Management's December 1986 issue, all but three (OCE-Holland, IBM-U.S., Xerox-U.S.) were manufacturing copiers in Japan.

The following page contains an analysis of the impact of large document xerographic copiers, by brand, prepared by CAP International.

REPROGRAPHIC OFFICE SYSTEMS



REPROGRAPHIC OFFICE SYSTEMS



IMPACT OF LARGE DOCUMENT XEROGRAPHIC COPIERS

	U.S. Unit Population History (000 of Units)					Est. 1986 Use (195,000 Sites)	
	1977	1981	1984	1986		Total	(ARMM)
Large Consoles[a]	0.1	3	6	15			
Mid-size Consoles[b]	—	—	1	2			
Desk-top Models[c]	—	—	—	4	(12'87)		
Total Copiers	0.1	3	7	21	(29'87)	8%	(19%)

[a]Available since 1968, but $100,000/unit
[b]Mid-size since 1983
[c]Desk-top since Oct. 1986 @ $3,700/unit

COPIERS FOUND AT XEROGRAPHIC USE SITES*

Model	(Intro)	1984	1985	1986
Xerox 1860	(1968)	38%	10%	11%
Xerox 2080	(1978)	36%	23%	29%
Xerox 2020		13%	12%	16%
Xerox 7080		9%	18%	18%
OCE 7200, 7500		11%	6%	3%
Shacoh		2%	2%	1%
Subtotal Large		100%	66%	62%
Xerox 840		—	20%	15%
Canon 24"		—	11%	9%
Bruning 900		—	9%	7%
Subtotal		—	34%	31%
Xerox 2510	(10/86)	—	—	7%
Total Copiers		100%	100%	100%
#Sites/1,000		121	195	175

*ARMM Surveys 1984,1985,1986

DISTRIBUTION OF XEROGRAPHIC MEDIA

	1986	(Adjusted)	Diazo
Opaque Paper	75%	94%	93%
Trans. & Vellum	17%	4%	5%
PET Film	6%	1%	2%
DK	2%	1%	—
Total	100%	100%	100%

THE OFFICE MACHINERY INDUSTRY

PHOTOCOPY MACHINE SUPPLIERS, BY MODEL

COMPANY	MODELS PRODUCED	COUNTRY OF MANUFACTURE
A. B. DICK	999RE, 998RE, 988RE, 970Z, 960EC	JAPAN
ADLER ROYAL	TA 215 Z, TA 220 RE, TA 209, TA 210 TC, TA 230 DZ	JAPAN
CANON USA	115,2015F, 4540RDF, 7550, 8570	JAPAN
EASTMAN KODAK	IM 40, EKTAPRINT 85 EKTAPRINT 250 AF, 330F, 235AF	JAPAN U.S.A.
HARRIS 3M	6030, 6022, 6040, 516, 6010	JAPAN
GESTETNER	2110C, 2140 RE, 2115 Z, 2130 Z, 2150 Z	JAPAN
I B M	III/60, III/85, III/50, III/70	U.S.A.
KONICA	5003 ZMR, 1803 ZMR, 1503 ZMR, 5503 ZMR 700M	JAPAN JAPAN U.S.A.
MINOLTA	EP 450 Z, EP 470 Z, 270, 410, 870	JAPAN
MITA	DC-1001, DC-152Z, DC-313ZD, DC-513Z, DC-114	JAPAN
MONROE	RL 717 Z, RL 750 Z, RL 735 Z, RL8352D, RL 810C	JAPAN
O C E	1925 DF, 1725 DF, 1825 ADF	HOLLAND
PANASONIC	FP-3030, 3040, 1530, 1100	JAPAN
PITNEY BOWES	L215, L315, D860, D230, M122	JAPAN

Continued.....

THE OFFICE MACHINERY INDUSTRY

PHOTOCOPY MACHINE SUPPLIERS, BY MODEL
(Continued)

COMPANY	MODELS PRODUCED	COUNTRY OF MANUFACTURE
RICOH	FT 6085, Ripro Jr., FT 3060 C FT 5000, FT 7060	JAPAN
SANYO	SFT 116, SFT Z 122F, SFT 70, SFT 600-605	JAPAN
SAVIN	7055, 7035, V35, 7050, 7020	JAPAN
SHARP	SF 9600, 9500, 8200, 7200. Z-60	JAPAN
SILVER REED	Copy Pro, Porta Copy	JAPAN
TOSHIBA	BD-3110, 5610, 5620, 7720, 8412	JAPAN
XEROX	1038, 1025, 1090, 9900, 1040	U.S.A. HOLLAND

SOURCE: ADMINISTRATIVE MANAGEMENT MAGAZINE 12/86

THE DUPLICATING MACHINE MARKET

Sales of duplicating machines **by United States producers** have languished in recent years, in the face of increasing import competition. The Commerce Department reported that **$244 million worth of these machines were shipped in 1985**, up 3.4% from the prior year. In fact, with the exception of 1983-84, U.S. sales have fallen fairly steadily from a peak $344 million posted during 1980. Comparing 1985 sales volume to the $101 million market size back in 1975, long-term average annual growth has been a strong 14%, but short-term growth from 1980-85 has been a ***negative*** 5.9% (-5.9).

Considering that price increases are very moderate, that imports are not much higher than exports (at about $50 million yearly), and that this is a mature market, **Marketdata estimates growth of the duplicators market to average only 3.2% through 1992. The market, including U.S. sales and imports, should be worth $259 million in 1987 and $300 million by 1992.** Predicasts, a Cleveland-based market research firm and database company, expects 1985-1995 sales of duplicators to average 3.1% growth. In addition, Appliance magazine estimates that 89,000 "units for replacement" will be sold during the current year.

There are three main segments to this market, by type duplicator:

* Spirit type duplicators
* Stencil type
* Offset and other type

Spirit duplicator sales hit a peak of nearly $108 million during 1981, but have been on the decline since then. They accounted for 18.6% of the total market in 1985. We expect sales of these devices to stabilize for 1987 and through 1992, at about $45 million. **Stencil** types account for a very small share of the total market, 4% in 1985. **"Offset & other"** kinds seems to be the one growth area, rising to over 81% of total duplicator sales in 1985, worth more than $198 million. We expect sales of this line to reach $207 million in 1987 and $250 million by 1992

Marketdata estimates that 1986 **imports** of duplicators amounted to $45 million, with 55% of the dollar volume attributable to Japanese firms. **Exports** were nearly as high, estimated at $36 million during 1986. Exports represented about 22% of domestic sales volume, with offset and other types of duplicators accounting for nearly all. Export volume has been running a steady $35-55 million per year since 1979.

Continued.....

Producer prices of duplicators rose at a 2.5% average annual pace from 1984-86, not much higher than the 1.5% rate for office machines as a whole in 1986. The biggest price hikes were seen during the inflationary period of the late 1970s-early 1980s, when double-digit increases up to 16% were common.

TOTAL SALES OF DUPLICATING MACHINES, PARTS & ATTACHMENTS

(Spirit, Stencil, Offset, Other)

($ Millions)

YEAR	TOTAL U.S. MFRS. SALES	ANNUAL % CHANGE	SALES BY TYPE DUPLICATING MACH SPIRIT*	STENCIL*	OFFSET & OTHER KIND**
1975	101.4	—	29.1	——— 72.3 ———	
1976	114.9	13.3	32.7	——— 82.2 ———	
1977	216.8	88.7	78	——— 124.3+ ———	
1978	218.9	1	93.9	7.7	117.4
1979	262.1	19.7	81.6	9.2	171.3
1980	344.7	31.5	107.1	7.5	230.2
1981	281.7	-18.3	107.7	8.1	165.9
1982	239.5	-15	64.5	9.1	165.8
1983	250.3	4.5	64.7	10.1	175.4
1984	235.8	-5.8	54.9	NA	180.9+
1985	243.7	3.4	45.3	NA	198.4+
ESTIMATE					
1987	259	3.2	45	—	207
FORECAST					
1992	300	3.2	45	—	250
AVG. ANNUAL % CHANGE 1975-85:	5.8		5.6	—	6.9

* Hand and electric types

** Includes parts and attachments

NA- Data not available

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA ESTIMATES, FORECASTS, CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

SALES OF DUPLICATING MACHINES, BY TYPE IN UNITS

YEAR	TOTAL DUPLICATING MACHINES	SPIRIT	STENCIL	OFFSET & OTHER
1975	102, 605	55, 247	----------47, 358----------	
1976	127, 757	79, 927	----------47, 830----------	
1977	125, 643	72, 855	----------24, 710+----------	
1978	160, 311	64, 498	14, 922	80, 891
1979	101, 976+	64, 155	16, 607	21, 214+
1980	107, 364+	71, 281	12, 470	23, 613+
1981	100, 136+	74, 515	11, 407	14, 214+
1982	65, 333+	46, 256	8, 773	10, 304+
1983	62, 003+	41, 268	9, 957	10, 778+
1984	50, 210+	39, 251	NA	10, 959+
1985	44, 436+	35, 426	NA	9, 010+

+ STENCIL, OTHER & PARTS-DATA NOT INCLUDED, NA

NA-DATA NOT AVAILABLE

THE FACSIMILE (FAX) MACHINE MARKET

United States manufacturers' shipments of facsimile machines have been tracked by the Commerce Department since 1980. In that year, $82 million worth of FAX machines were sold. This figure rose to a peak $185 million by 1985. Falling U.S. sales reflects the fact that the market over the past four years at least, has been more heavily controlled by Japanese producers (mainly: Matsushita, Canon, Nippon Electric, Fujitsu, Sharp, and Toshiba). With the current import ban approved by the U.S. Senate, Toshiba disappears from the picture.

The market currently is estimated to be worth about $400 million. Over the past decade, 500, 000 American offices bought FAX machines. International Resource Development Inc., a Connecticut research firm, estimates that the installed base of FAX machines in the U.S. should rise from 330,000 to 540,000 this year, an increase of 210 000 units for 1987.

Marketdata forecasts that the next three years will be ones of particularly strong growth for the facsimile machine market, at least 15% per year, to $580 million by 1990 and $696 million by 1992. The surface has merely been scratched in U.S. offices. Many comapnies are just now realizing the benefits of instantaneous communication of words, data, and graphics. It is much faster than the Post Office, faster than express mail, and once the initial investment is made in a $1,500-2,000 machine the cost of transmission is the minimal cost of a phone call.

As more firms buy FAX machines, word-of-mouth advertising should work in favor of increased demand. The applications are enormous--companies can send ad layouts and copy to typesetters, printers and ad agencies for approval, time-sensitive statistics for sales and financial reports can be sent right away, and more reliably, etc., etc., etc.

A **new technology development** could help **U.S.** companies to stem the import tide. AT & T, IBM, and much smaller companies like Chorus Data of Merrimack, NH and Datacopy Corp. of Mountain View, CA have been busy working on ways to link electronic scanners, resembling copiers, to personal computers. The result is that some businesses can use existing computers and printers to do the work of FAX machines--at less cost. In addition, the computers can modify or store documents before they are transmitted, in ways that FAX machines cannot. This new technology has been given the name **"virtual facsimile"**.

American firms are moving carefully, though. They are unsure how many of the eight million people with PCs in their offices might want to use

Continued.....

them like FAX machines, and how much they'd be willing to pay. It may be a "hard sell", with many trade-offs between speed, image quality and cost. U.S. companies are also reluctant to go head-to-head with the Japanese giants. These Japanese companies went after the FAX market very aggressively, more so than in other office equipment sectors, because facsimile is particularly valuable to them as an alternative to telex--it is capable of handling their character-based language.

The way the "virtual facsimile" method works is that scanners convert documents into electronic records which can be stored, sent from computer to computer via phone lines, called up on a screen and amended or updated, and printed out at distant locations. Scanners only cost $200, less than one-tenth the U.S. cost of basic FAX machines. A wide range of PC boards and software to link scanners with personal computers is available or about to be introduced, nearly all provided by domestic companies.

One strategy available to the Japanese is to drastically lower FAX machine prices. What is more likely is that many firms will attempt to sell ***both*** FAX machines and the **components** incorporated into virtual FAX machines. They already dominate the printer market, and are among the leading producers of scanners. U.S. producers' strength lies in adding value to products, something the Japanese have not done as yet with the personal computer. Ironically though, a Silicon Valley communications equipment supplier called Gammalink has been selling a $995 package that can link facsimile machines to personal computers. If prices of FAX machines and such packages as Gammalink's drop, the use of scanners as a substitute for FAX could be brought to a quick halt.

FACSIMILE MACHINE SUPPLIERS, BY MODEL

KONICA BUS. MACHINES	KONIMAIL 400
TRANS-LUX CORP.	TRANSFAX I
OMNIFAX TELAUTOGRAPH CORP.	OMNIFAX HIGH SPEED FAX
PITNEY BOWES	8410
CANON U.S.A.	FAXPHONE 10, FAX 230, 620
FUJITSU IMAGING SYST. OF AMERICA	DEX EXPRESS 6100
HARRIS/3M DOCUMENT PRODS.	MODEL 2123

SOURCE: MANUFACTURER PRODUCT LITERATURE, ADS

THE MAILROOM MACHINERY MARKET

The U.S. market for mailroom machinery, as defined by this report, grew 4.3% to $586 million during 1985. Long term growth of this market since 1975 has averaged 7.6% per year, and growth has been strong since 1983. Another sustained period of growth took place from 1977-81. The market stood still, with sales volume dropping by 1.2%, in the 1982 downturn, but ***overall*** growth has been fairly steady over the years.

This market is comprised of four main machinery segments:

* Mailing & Letter Handling machines
* Addressing machines
* Collating machines
* Forms Handling equipment

Products included in this market are: labellers, decollators, bursters, inserters, sorting and tying machines, folding machines, etc. The market does **not** seem to be as adversely affected by import (Japanese) competition as other office equipment sectors. Virtually all the major producers are **domestic** companies such as: Pitney Bowes, Bell & Howell, Martin Yale Industries, Dispensa-Matic, Heyer, Inc., Swingline, Scriptomatic, Accufast, Master Addresser, Datatech, The Novak Company, Michael Business Machines, etc.

Imports historically represent only 3-5% of "apparent consumption" (imports plus U.S. mfrs. sales, less exports) for **addressing** machines. But, imports of **mailing & letter handling** machines rose sharply to $348 million during 1985 (compared to $75 million of exports). Imports of the latter machines outpaced exports by a rate of 1.7 to one from 1981-84. Marketdata expects these imports to have subsided somewhat in 1986, though, to $246 million, based on January-June 1986 activity.

As for the relative sizes of each machinery segment, following are **actual** 1985 sales by U.S. manufacturers, as reported by the Commerce Department:

Mailing & Letter Handling machines	$437.0 million
Addressing machines	71.6
Forms Handling machines	48.7
Collating machines	28.6

Historically, from 1975-85, mailing & letter handling machines have

Continued.....

accounted for 70.3% of the market, followed by addressing machines with 16.4%, forms handling equipment at 8.7%, and collating machines at 6%. Since 1979, mailing & letter handling machinery sales have constituted a larger share of the total mailroom machinery market, as high as 78% during 1983. Collating and addressing machinery's share conversely, has fallen.

Ten-year growth has been stongest in the **forms handling machine** market, a 32% average yearly rate, although between 1980 and 1985 sales have been stagnant. Sales of **addressing machines** doubled in ten years, advancing at a 10.3% annual pace. Manufacturers' sales of **mailing & letter handling and collating machines** both grew at an average yearly rate of 5.3% (see percent distribution analysis in this section). By comparison, the overall market grew 7.6% annually.

For 1987, Marketdata estimates that the total mailroom machinery market will be worth $663 million, growing 13% between 1985 and 1987. By 1992, we expect volume to reach $892 million, advancing at an average yearly pace of 6.9%. Perhaps due to less import competition, **prices** seem to be firmer in this market. Overall, **all** office machinery producer prices increased only 1.5% in 1986. However, forms handling equipment prices rose 5.2%, addressing machines rose 3.6%, and mailing machinery was up 3.5%.

Based on recent product mix patterns (percent distribution ot total mailroom machinery market) we estimate the following market segment values.....

($ Mill.)	Mailing & Letter Handling Mach.	Addressing Mach.	Collating Mach.	Forms Hand. Mach.
1987 Est.	$483	$89	$33	$58
1992 Fore.	611	138	54	89

Some additional information is provided by Appliance magazine, which estimates that the **average life** of an addressing or collating machine is 7 years, and is 6 years for a forms handler. Furthermore, they estimate that 350,000 addressing machine replacement units will be sold during 1987, as well as 200,000 forms handlers and 20,000 collators.

Continued.....

The market research firm Frost & Sullivan made some 1984-89 forecasts of consumption of selected types of office machines by **insurance** companies. They estimated that insurance companies would spend $89.3 million on folding machines over this five-year period, $86.3 million on paper inserters, and $52.4 million on collators. Dividing these figures by five to get **yearly** expenditures, consumption by the insurance industry, therefore, would account for approximately 32% of the current collating machine market, and a little over 7% of the total mailing & letter handling machine market.

A current development, according to the Wall St. Journal (June 6, 1987) regarding the market is the U.S. Postal Service's award of $19.4 million of contracts for development and testing of computerized mail sorting machinery to six comapnies. Under the testing contracts just awarded, Reconition Equipment and four other companies--Bell & Howell Co., Toshiba Corp. (Japan), Unisys Corp., and AEG AG of West Germany--will provide the Postal Service with new machines to be tested in the summer of 1988. Elsag, an Italian company, will produce for testing a kit to modify older letter-sorting machines in use since 1982. (Note: With the current Senate ban Toshiba is no longer a candidate).

The Postmaster General said the agency will use tests to decide whether to purchase new mail-sorting machines, which would be capable of "reading" a typewritten address and applying a computerized code to each letter, or whether to buy kits to modify some machines already in use to accomplish the same task

THE OFFICE MACHINERY INDUSTRY

PERCENT OF TOTAL MAILROOM MACHINE MARKET BY TYPE MACHINE—PERCENT OF SALES

	TOTAL MAILROOM MACHINERY MARKET ($ MILL.)	ANNUAL PERCENT CHANGE	% OF TOTAL			
			MAILING & LETTER HANDLING	ADDRES-SING MACH.	COLLATING	FORMS HANDLING
1975	$332.2		85.9	10.5	—	3.4
1976	200.9	-39.6	74.7	18.9	—	6.2
1977	224.2	11.5	77.2	16.4	—	6.2
1978	257.8	14.9	59.9	21.6	8.1	10.2
1979	332.2	28.8	59	21.1	8.7	11
1980	354.8	6.8	59.1	19.4	8	13.3
1981	404.3	13.9	63.6	17.4	7.7	11.1
1982	399.7	-1.2	64.4	20.7	5.2	9.5
1983	508.4	27.1	78.3	10.9	2.2	8.3
1984	561.6	10.4	76.4	11.8	3.4	8.2
1985	585.9	4.3	74.5	12.2	4.8	8.3
ESTIMATE						
1987	$663.0	6.5*	72.8	13.4	5	8.8
FORECAST						
1992	$892.0	6.9*	68.5	15.5	6	10

*Average Annual Growth Rate

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

U.S. MANUFACTURERS SALES OF MAILING, LETTER HANDLING, AND ADDRESSING MACHINES, BY TYPE

($ MILLIONS, QUANTITY IN UNITS)

	FORMS HANDLING EQUIPMENT (Bursters, Decollators, Imprinters)			
	VALUE OF SALES	ANNUAL % CHANGE	UNIT SALES	ANNUAL % CHANGE
1975	$11.6		155,246	
1976	12.6	8.6	130,753	-15.8
1977	14.1	11.9	123,277	-5.7
1978	26.4	87.2	175,507	42.4
1979	36.6	38.6	164,562	-6.2
1980	47.4	29.5	139,257	-15.4
1981	45.1	-4.9	122,168	-12.3
1982	38.2	-15.3	115,334	-5.6
1983	42.6	11.5	22,112	---
1984	46.1	8.2	26,257	---
1985	48.7	5.6	24,878	---
	COLLATING MACHINES			
1978	$20.9		9,007	
1979	29.2	39.7	11,191	24.2
1980	28.6	-2.1	7,827	-30.1
1981	31.3	9.4	10,920	39.5
1982	20.8	-33.6	9,182	-16
1983	11.6	-44.2	4,494	-51.1
1984	19.6	69	4,909	9.2
1985	28.6	45.9	5,563	13.3

THE OFFICE MACHINERY INDUSTRY

U.S. MANUFACTURERS SALES OF MAILING, LETTER HANDLING, AND ADDRESSING MACHINES, BY TYPE (CONTINUED)

($ MILLIONS, QUANTITY IN UNITS)

	MAILING MACHINES (1)	LETTER & ENVELOPE HANDLING MACHINES (2)	MAILING MACHINES	LETTER & ENV. HANDLING MACHINES
	VALUE OF SALES		UNIT SALES	
1975	$160.3	$125.1		
1976	150.2 *	NA		
1977	121.6	51.6	144,872	
1978	154.6		198,729	
1979	196.3		258,617	
1980	209.7		195,767	
1981	191.1	66.4	205,576	18,150
1982	193.5	64.1	184,398	14,257
1983	311.4	86.9	157,390	12,826
1984	297.1	132	229,311	29,953
1985	305.4	131.6	250,409	27,538
ESTIMATE				
1987	338	145	275,000	25,500
FORECAST				
1992	415	196	—	—
AVG.ANNUAL	9.1	0.5	9.1	

* DATA FOR MAILING MACHINES & LETTER/ENVELOPE HANDLING MACHINESS COMBINED.

(1) INCL. MAIL SORTING, TYING (BUNDLING), MAIL CANCELLING (POST OFFICE), MACHY., POSTAGE METERS, POSTAL PERMIT MAILING MACHINES, STAMP AFFIXERS (EXCL. PARCEL POST SCALES).

(2) INCL. ENVELOPE OPENING & SEALING MACHINES, FOLDING & INSERTING MACHY.

NA - DATA NOT AVAILABLE

SOURCE: U.S. DEPT. OF COMMERCE

THE OFFICE MACHINERY INDUSTRY

U.S. MANUFACTURERS SALES OF ADDRESSING MACHINES
($ MILLIONS, QUANTITY IN UNITS)

	VALE OF SALES	ANNUAL % CHANGE	UNIT SALES	ANNUAL % CHANGE
1975	$35.2			
1976	38.1	8.2		
1977	36.9	-3.2	258,994	
1978	55.9	51.5	269,429	4
1979	70.1	25.4	299,158	11
1980	69.1	-1.4	313,806	4.9
1981	70.4	1.9	375,775	19.7
1982	83.1	18	439,509	17
1983	55.9	-32.7	311,631	-29.1
1984	66.8	19.5	417,990	34.1
1985	71.6	7.2	418,823	0.2
ESTIMATE				
1987	89	12.2	425,000	0.8
FORECAST				
1992	138	11	---	---
AVG.ANNUAL % CHANGE		10.3		7.7

* INCL. ADDRESS LABELING MACHINES, ADDRESSING PLATES & EMBOSSERS, AND ADDRESSER-PRINTER MACH.

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

MAILROOM MACHINERY SUPPLIERS, BY TYPE MACHINE/MODEL

COMPANY	MODELS PRODUCED
DISPENSA-MATIC	U-45, U-60, DISPENSAMATIC 16 LABEL AFFIXERS/DISPENSERS
MICHAEL BUSINESS MACH.	D-922 DECOLLATOR, B-729 FORMS BURSTER, FASTFOLD 17 FOLDER, COLLATOR 10
PITNEY BOWES	COMPUTER OUTPUT MAILING SYST. 8300 INSERTING/MAILING SYST.
AUTOMECHA LTD.	ACCUFAST LABELLER
HEYER, INC.	EF-2 FOLDER, 2200 HIGH SPEED LABELLER
AMSCO	ENVELOPE INSERTING MACH.
DATATECH, INC.	AUTOMATIC LABELLERS
TAB PRODUCTS CO.	BURSTERS, DECOLLATORS, CHECK SIGNER & IMPRINTERS
SWINGLINE	DESKTOP BURSTER, DECOLLATOR, SHREDDER
SCRIPTOMATIC, INC.	SERIES 1000 AUTO. LABELLERS
ACCUFAST	LABELLERS
MASTER ADDRESSER CO.	PACESETTER MODEL 110 LABELLER
INTERNATIONAL MAILING SYSTEMS	MODULAR IMS 300 MAILING SYST.
MARTIN YALE INDUSTRIES	TABLE TOP BURSTER, HIGH SPEED DECOLLATOR

THE TIME RECORDER & TIME STAMP MACHINE MARKET

The market for time stamping and recording machinery was valued at **$61 million in 1985**, according to the Commerce Department's survey of U.S. manufacturers. Since 1975, the market has grown at a 13.2% average yearly pace, more than doubling from a level of $26 million back in 1985.

Marketdata estimates this market to be worth $66 million in 1987, 8.5% growth over the 1985-87 period, and to reach $85 million by 1992 (5.8% average yearly growth). Growth in this mature product line should be moderate, considering the slowdown in "smokestack" manufacturing sectors where time recorders would be used to keep track of production workers on assembly lines. Although, some **service** sectors that have grown rapidly in recent years and continue to do so (fast food chains) would also be candidates for using such machines, to keep tabs on rotating shifts of many part-time workers.

We can identify ten main players in this market (although there are undoubtedly more): Amano America, Acroprint Time Recorders, Cincinnati Time, Coastal Data Products, Kronos Inc., Lathem Time Recorders, Rapidprint, Simplex Time Recorder Co. (with 1,400 workers), Stromberg Products and Tech Time Inc. From available ads, manufacturer product literature and other sources, it appears that Simplex, Lathem and Stromberg are probably the market leaders.

Producer prices for these machines rose 3.8% during 1986, double the 1.5% rate of office machinery overall. On a more long-term basis, the highest rates of inflation in this equipment were experienced during the 1980-83 period, when double-digit yearly price hikes (as high as 18%) were commonplace. But, prices ***fell*** 15.8% in 1984, and dropped another 5% during 1985.

Exports and imports information is not available specifically for these machines. Information is probably combined in an "all other machinery" classification. However, there doesn't seem to be a great deal of import competition here, as this is a small market characterized by machines that are more mechanical than electronic in nature, and one not likely to be attractive to Japanese firms.

Appliance magazine states that the "average life" of a time recording and stamping machine is typically nine years. Appliance expects 250,000 "units for replacement" to be sold in 1987, up 44% over the prior year.

THE OFFICE MACHINERY MARKET

U.S. MANUFACTURERS SALES OF TIME RECORDING AND TIME STAMP MACHINES

	VALUE OF SALES ($ MILL.)	ANNUAL % CHANGE	UNIT SALES	ANNUAL % CHANGE
1975	$26.1		150,572	
1976	26.9	3.1	141,759	-5.9
1977	29.6	10	159,388	12.4
1978	33.1	11.8	165,608	3.9
1979	37.8	14.2	173,485	4.8
1980	39.7	5	167,656	-3.4
1981	41.4	4.3	141,853	-15.4
1982	45.6	10.1	153,729	8.4
1983	57.3	25.7	154,918	0.8
1984	58.7	2.4	163,174	5.3
1985	60.7	3.4	166,551	2.1
ESTIMATE				
1987	66	4.3*	168,400	1.1*
FORECAST				
1992	85	5.8*	177,700	1.1*
AVG. ANNUAL % CHANGE 1975-85		13.3		1.1

* Average annual rate

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA ESTIMATES & FORECASTS

THE OFFICE MACHINERY INDUSTRY

TIME STAMPERS/RECORDERS SUPPLIERS, BY MODEL

COMPANY	MODELS PRODUCED
RAPIDPRINT, INC.	ARL-E
STROMBERG PRODUCTS	EPR 200 PAYROLL RECORDER
COASTAL DATA PRODUCTS	SMART CLOCK
LATHEM TIME RECORDER CO.	LT SERIES TIME STAMPS, PROGRAM TIMERS, WATCHMAN CLOCKS, MASTER SYSTEMS
ACROPRINT TIME RECORDER CO.	DATE STAMPS, CHECK SIGNERS & NUMBERERS
CINCINNATI TIME	TIME STAMPS & COMPUTERS TC-100, 250, 400, 500 CLIPPER, SENTINEL, PAYMASTER, MASTER CLOCK" BRANDS
KRONOS, INC.	TIMEKEEPER CENTRAL SYST.
AMANO AMERICA, INC.	TIME DATA COLLECTION SYST., MR-7000, MJR 8000, DX-7000, 6800/6900, 5500/5600, 4700/4800 SERIES
TECH TIME, INC.	TIME RECORDING & DATA COLLECTION SYSTEMS

SOURCE: MANUFACTURERS' PRODUCT LITERATURE, ADS

THE CHECK HANDLING MACHINE MARKET

United States manufacturers shipped $117 million worth of machines used to number, write, date and otherwise process checks, invoices and other such paper documents in 1985. Growth in this market has averaged 15.8% per year since 1975, largely due to the 72% jump in sales in 1985 alone. Discounting this one year, sales volume ranged from $50-70 million between 1979 and 1984. **Marketdata estimates the size of this market to reach $133 million in the current year--1987, and to advance at an average annual pace of 7 % though 1992, when the market is forecast to reach $179 million.**

Exports of such machines amounted to an estimated $6.2 million in 1986, 35% of which was to Canadian buyers. From 1979-83, exports volume ranged from $9-12 million, representing 14-22% of domestic sales. Producer prices of check handlers rose strongly, 7.4% during 1986, far higher than the 1.5% rate for office machines in general. **Imports** equalled only 3% of "apparent consumption" (imports plus U.S. mfrs. sales, less exports) in 1983, worth $1.8 million. Import competition here does not seem to be sigificant.

The **major companies in the market** are: Cummins-Allison (perforators), Martin Yale Industries, and Swingline. Appliance magazine estimates the average lifetime of a check handling machine at 7 years, and staplers and check handlers combined are estimated to constitute 350,000 in unit sales for replacement in 1987

THE OFFICE MACHINERY INDUSTRY

U.S. MANUFACTURERS SALES OF CHECK HANDLING MACHINES

(Canceling, Cutting, Dating, Endorsing, Numbering, Protecting, Signing, Writing

	VALUE OF SALES ($ MIII.)	ANNUAL % CHANGE	UNIT SALES	ANNUAL % CHANGE
1975	$45.3		159, 370	
1976	28.6	-36.9	155, 599	-2.4
1977	31.1	8.7	152, 450	-2
1978	41.5	33.4	160, 599	5.3
1979	52.1	25.5	245, 657	53
1980	61.4	17.8	251, 104	2.2
1981	57.6	-6.2	175, 152	-30.2
1982	64.2	11.5	184, 098	5.1
1983	58.2	-9.3	106, 459	-42.2
1984	68.1	17	104, 450	-1.9
1985	117.1	71.9	96, 048	-8
ESTIMATE				
1987	133	6.8*	—	—
FORECAST				
1992	179	7*	—	—
AVG. ANNUAL % CHANGE 1975-85:		15.8		-4

* Average annual rate

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA ESTIMATES, FORE.

MISCELL. MACHINE SUPPLIERS (STAPLERS, PERFORATORS, HOLE PUNCHERS, PENCIL SHARPENERS, CHECK SIGNERS, DICTATING MACH.)

CUMMINS-ALLISON	PERFORATORS
STANLEY BOSTITCH	BOSTITCH EDS 30 STAPLER
ROLODEX CORP.	PUNCHODEX HOLE PUNCHERS
THE STAPLEX CO.	STAPLERS
MARTIN YALE INDUSTRIES	AUTO. CHECK SIGNERS, IMPRINTERS
PANASONIC	KP-L1000 AUTO-STOP ELECTRIC PENCIL SHARPENER
SWINGLINE	6380 CHECK SIGNER
DICTAPHONE	PORTABLE RECORDERS, CONNEXIONS VOICE PROCESSING SYSTEM
HARRIS-LANIER	POCKET PROTEGE

SOURCE: MFR. PRODUCT LITERATURE, ADS

THE ELECTRONIC CALCULATOR MARKET

After a yearly market ranging in size from $400-500 million from 1975-81, calculator sales by United States companies have fallen off sharply in the face of intense import competition in recent years. **Sales by U.S. manufacturers fell to $151 million by 1985.** As with so many other consumer and office electronic equipment areas, Japanese imports have increasingly supplied much of the market.

Imports of calculators in 1986 were estimated at $315 million. U.S. producers' sales were $151 million. Adding the two, **the probable size of the market in 1986 was $466 million**, with Japan accounting for 68% of the value of imports. This $466 million estimate corresponds well with Electronics magazine's "1987 U.S. Market Forecast Report", where the calculator market was stated to be worth $530 million during 1986, up only 1.9% over 1985. Their estimate calls for a **$555 million market in 1987, up 4.7%. Marketdata projects that the market will advance at an average annual rate of only 4.2% through 1992, due to competitive market pressures, reaching $670 million.**

Major competitors in this market include: Adler-Royal, Aurora, Canon USA, Casio, Facit, Hermes, Hewlett-Packard, Monroe, Olympia USA, Panasonic, Remington-Rand, Royal, Sanyo, Sharp, Swintec, Texas Instruments, Towa and Victor.

To survive in this mature market, **manufacturers are adding a host of new features** and functions and flexibility, such as.....

* Multiple, built-in memories
* Pre-programmed functions
* Resolving customer complaints about glare
* Modular designs, detachable keyboards (TI 5340)
* Portable units devoted to dialing phone numbers (Sharp's EL-6250 Dial Master - $89.95)

Manufacturers are specializing more, concentrating on meeting the needs of specific user occupations such as: office managers, bookkeepers, accountants, financial analysts, bankers, traveling sales reps, the scientific community, etc.

Future trends to look for in calculators include the following.....

* Flat panel-based programmable keyboards

Continued.....

* Displays with a second color, for negative numbers
* Data download capabilities from a calculator to a desktop computer.

Admininstrative Management magazine reported, in a June 1987 issue, that a few years ago there was a big controversy about whether handheld **computers** would take over the handheld calculator market, particularly since computers have alphabetic keyboards and most calculators do not. In general, computers were supposed to do spreadsheets, among other things. "They were expected to be more capable than what they are, "(Shelley DePuy-market analyst at Venture Development Corp.). Because they failed to live up to consumers' expectations, they did ***not*** consume the market and handheld calculators are still selling. Computers are good for analyzing data, but not good devices on which to add and subtract.

The best of all possible worlds will come in the near futurre when handheld calculators will be programmed in the same language as personal computers--usually BASIC--and will deliver numbers to and accept numbers from the computer's spreadsheet. At this point, there won't be much difference between the two machines. It is doubtful that the calculator market will crash drastically, since they have done such a good job with basic number crunching up until now.

THE OFFICE MACHINERY MARKET

ELECTRONIC CALCULATOR SALES, BY TYPE

(Hand-Held and Desk-Top Units)

($ Millions)

YEAR	TOTAL U.S. MFRS'. SALES ($ Mill.)	ANNUAL % CHANGE	HAND-HELD (4,5,6 or more functions) ($ Mill.)	% TOTAL SALES	DESK-TOP (display & printing types) * ($ Mill.)	% TOTAL SALES
1975	490.4		319.4	65.1	171	34.9
1976	425.2	-13.3	146.8+	34.5+	158.9+	37.4+
1977	506.7	19.2	159.1+	31.4+	256.4+	50.6+
1978	373.4	**-26.3**	185.1	49.6+	154.3+	41.3+
1979	452.3	21.1	170.7	37.7	267.1+	59.1+
1980	483.3	6.9	216.6	44.8	256.3	53
1981	488.9	1.2	189.4	38.7	299.5	61.3
1982	262.1	**-46.4**	157	59.9	105.1	40.1
1983	126.9	**-51.6**	NA	---	13.3+	---
1984	173.8	36.9	123.1+	70.8+	NA	---
1985	151.4	-12.9	116.3+	76.8+	NA	---
AVG. ANNUAL % CHANGE: 1975-85:		-6.9	---		---	

*Includes peripheral devices for calculators NA-Data not available

NOTE: Data withheld for certain product categories, therefore full product line sales not available.

SOURCE: U.S. DEPT. OF COMMERCE

THE OFFICE MACHINERY INDUSTRY

CALCULATOR SUPPLIERS, BY MODEL

COMPANY	MODELS PRODUCED
ADLER-ROYAL	ROYAL 480 PD, 1228 PD, ADLER 435 PD, ADLER 120 PD
AURORA-IMPEX	AURORA 18 PD
AURORA	AURORA D-9, D-5
CANON USA	BP 1210D, CP 1211D, P-1440D, JP-2030
CASIO	DR-7260, 2212, 105, DS-120
FACIT	2301, 2263, 2261, 2264,
HERMES	5700, 5600, 5500, 5300
HEWLETT-PACKARD	HP28C, HP18C
MONROE	3020, 2145, 2125, 1125
OLYMPIA USA	EC 8000, 6000, 4000, 7000
PANASONIC	JE 656P, 680P, 420NU
REMINGTON-RAND	390, 315, 412
ROYAL BUS. PROD.	26PD
ROYAL	248 PD2, 228PD, 22PD,
SANYO	3420DP, 5322DP, CY3020
SHARP	EL6250, QS1660, QS2660, CS1680, CS2680
SWINTEC	M4500, M4600

Continued.....

THE OFFICE MACHINERY INDUSTRY

CALCULATOR SUPPLIERS, BY MODEL (Continued)

COMPANY	MODELS PRODUCED
TEXAS INSTRUMENTS	5150, 5320, 5330, 5340
TOWA	780FK, 926HS, 440KK, 555PDM
VICTOR TECH.	1500, 1520, 1530, 1560

THE DICTATING MACHINE MARKET

Official Government statistics regarding the size of the dictating machine market for recent years are not available. Therefore, one must consult such trade associations as CBEMA (Computer & Business Equipment Mfrs. Assoc.), and trade journals. **CBEMA estimates the market in 1985 to have been valued at $296 million.** The market has three distinct segments, as follows.....

	Estimated 1985 Sales	% of Total
Desktop Dict. Mach.	$138.5 Mill.	46.8
Portables	81.2	27.5
Central Systems	76.1	25.7
Total:	$295.8	

Appliance magazine says that the average life of desk dictating machines runs about 8 years, and 9 years for larger dictating **systems.** They expect **1987 unit sales for replacement** to be:

Desk dictating machines	290,000 units
Dictating mach. systems	26,000
Portable dictating mach.	315,000
Total:	631,000

Electronics had forecasted 1983-87 growth for the market at 4.1% per year. Computer Weekly's 1982-86 forecast was for 6.6% annual gains. Frost & Sullivan expects sales **by dealers** to increase from 55% of production in 1982 to 70% by 1987. **Imports are substantial** in this market--representing 80-99% of apparent consumption. The value of imports soared to $191 million in 1984, compared to only $2.5 million in ***exports.***

Only 20% of the white collar workforce is estimated to use dictating machines, leaving a tremendous untapped potential for the future. Fully 75% of sales are to companies that already have equipment, and only 25%

Continued.....

to ***new*** users. Dataquest analysts point out that the dictation market grew tremndously in the 1970s and early 1980s, driven by the growth of word processing pools that could handle a lot of dictation. Business flattened out when the market was fairly satisfied. The next big growth period, according to Administrative Management, is expected right now, from 1987-1990, when the dictating machines in use now and word processors will be old enough and cheap enough to replace. **The fast-growth segment of the market is in portable models,** because they are attracting new users, and this is the primary method producers will use to expand the market's size.

Marketdata expects the market to grow 6.5% to $315 million by 1987, and average 5.5% annual gains through 1992, when the market is forecast to reach $402 million.

The major players in this "oligopolistic" market are **Dictaphone** and **Harris/Lanier.** These two firms undoubtedly capture the "lion's share" of sales (probably 65-75%). Norelco and Sony run second behind them. Lanier Business Products in 1986, according to Dun & Bradstreet, had 5,100 office equipment (not just dictating machine-related) employees working at its Atlanta, GA facilities, and Dictaphone had 100 at its Rye, NY plant.

All producers expect big improvements over the next five years, especially in **digital dictation.** New equipment will mean strategic partnerships and acquisitions of high-tech companies in order to merge future science with dictation. Dictaphone is considering an alliance with manufacturers of voice-activated typewriter systems. Sony is looking at digital dictation. Most analysts expect good growth for the market because confidentiality promotes dictation, since computers are regularly broken into.

Sony does not see digital voice impacting the portables area, or desktop models. These units will get smaller but won't change drastically over the next five years, barring any major technological breakthrough. Word processors will likely become more miniaturized, and will include dictation and transcription equipment right in the word processor. Voice will be stored on cassettes or on a floppy disk inserted into the drive. Price tags for some dictation equipment can run quite high, as in Harris/Lanier's System IV--a $60,000 digital central dictation unit.

THE OFFICE MACHINERY INDUSTRY

U.S. PRODUCER SALES OF TELEPHONE ANSWERING MACHINES, PARTS, ATTACHMENTS & SUPPLIES USED WITH BUSINESS MACHINES

	TELEPHONE ANSWERING MACHINES		PARTS & ATTACHMENTS FOR OFFICE MACHINES	SUPPLIES USED WITH BUSINESS MACHINES
	UNIT SALES (000)	FACTORY SALES ($ MILL.)	($ MILL.)	(PRINTED OR OTHER) ($ MILL.)
1982	850	$110.0	$136.7	$537.5
1983	2,200	190	147.8	448.5
1984	3,000	230	145.5	493.3
1985	3,600	266	195.2	487.2
1986	4,400	322	NA	NA
ESTIMATE				
1987	6,000	386	—	455
FORECAST				
1992	8,400	550	—	—

NA - DATA NOT AVAILABLE

SOURCE: U.S. DEPT. OF COMMERCE, ELECTRONIC INDUSTRIES ASSOCIATION, MARKETDATA ESTIMATES

THE OFFICE MACHINERY MARKET

U.S. MANUFACTURERS SALES OF PENCIL SHARPENERS, STAPLERS, PAPER CUTTERS, MISCELLANEOUS REBUILT MACHINES

	VALUE OF SALES ($ MILL.)	ANNUAL % CHANGE
1975	$182.3	
1976	183.1	0.4
1977	190.7	4.2
1978	198.4	4
1979	283.2	42.7
1980	254.2	-10.2
1981	324.4	27.6
1982	NA	---
1983	NA	---
1984	759.1 *	---
1985	1,016 *	---
ESTIMATE		
1987	1,320	---
AVG. ANNUAL % CHANGE 1975-81		13

NA - DATA NOT AVAILABLE *INCL. TYPEWRITERS

NOTE: DATA FOR STAPLERS IS SPARSE, BUT SALES OF ELECTRIC STAPLERS WERE $5.7 MILLION IN 1983. NON-ELECTRIC STAPLER SALES, COMBINED WITH PENCIL SHARPENERS & OTHER MACHINES, ARE NOT KNOWN.

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA ESTIMATE

THE OFFICE MACHINERY INDUSTRY

SHREDDER SUPPLIERS, BY MODEL

COMPANY	MODELS PRODUCED
SWINGLINE, INC.	DESKTOP SHREDDER
MICHAEL BUSINESS MACHINES	DESTROYIT 3801 EDP
CUMMINS-ALLISON CORP.	
ALLEGHENY PAPER SHREDDER CORP.	MODEL J-25
WILSON JONES	A 600 S, A 800
DATATECH, INC.	ITIMUS SHREDDERS
MARTIN YALE INDUSTRIES	ULTRASHRED LINE
THE HEDMAN CO.	WHISPERQUIET

COMPUTER-SEARCHED ABSTRACTS OF OFFICE MACHINERY SALES FORECASTS AND END-USER CONSUMPTION, BY TYPE MACHINE

One of the best methods of collecting a wide variety of **current** information about a particular market, topic or industry is to utilize a computerized business database that is continuously updated. Marketdata, in order to provide the reader with a view of how ***other*** industry analysts, market research firms, and trade journals see the market for office machines, has performed a custom database search through a University Center For Business Research.

A particularly good database is the **Predicast U.S. Forecasts** file, under the scope of **Dialog Information Services**. Marketdata has searched this database for SIC code 3579, from January 1986 to date. The search produced the 140+ "abstracts" contained in the following section. Abstracts are grouped by type machine, cover forecasts for the current year and through 1995, and each contains bibliographic information regarding the source, date of publication, page number, etc.--in case the reader needs to trace the whole article for more information.

The information in these abstracts allow Marketdata to formulate its own "consensus" forecasts of various markets, corroborating trends and directions in the market and providing the most accurate forecasts possible.

Abstracts in this section came from the the following magazines and trade journals.....

Appliance	Industry Week
Computerworld	IRD News
EDP Weekly	Office Equipment
Electronics	Purchasing
Fortune	U.S. Industrial Outlook (Dept. of Commerce)

Continued.....

In addition, the following market research firms and analysts working for them, were cited.....

Dataquest
Frost & Sullivan
Predicasts
Venture Development Corp.

Companies can access these databases **themselves** with a computer and modem, at any time, and obtain abstracts instantly on their printer (on-line), at roughly $.25-.30 per abstract. They can be printed "off-line", as they appear in this section, at a cost of about $.50 per abstract, if a company does **not** have the required equipment itself and contracts a local business library to do it. Consequently, it represents an inexpensive way to gather information about a market from a comprehensive array of sources, rapidly, and is recommeded highly by Marketdata as part of any planning/forecasting activity.

THE OFFICE MACHINERY INDUSTRY

SUMMARY OF COMPUTER ABSTRACTS INFORMATION

AVERAGE LIFE OF BUSINESS MACHINES (1st Owner Usage Basis)
(SOURCE: APPLIANCE MAGAZINE)

ADDRESSING MACHINES	7 YRS.
COLLATING MACHINES	7
FORMS HANDLING EQUIPMENT	6
DESK DICTATING MACH.	8
DICTATING MACH. SYSTEMS	9
ELECTRONIC TYPEWRITERS	8
ELECTRIC STAPLERS & CHECK HANDLERS	7
TIME RECORDING/STAMP MACH.	9

UNIT SALES "FOR REPLACEMENT" -1987 ESTIMATES
(SOURCE: APPLIANCE)

ADDRESSING MACHINES	350,000
COLLATING MACHINES	20,000
DUPLICATING MACHINES	89,000
ELECTRIC TYPEWRITERS	230,000
ELECTRONIC TYPEWRITERS, EXCEPT INTELLIGENT	1,400,000
MANUAL TYPEWRITERS	9,000
DESK DICTATING MACHINES	290,000
DICTATION MACH. SYSTEMS	26,000
PORTABLE DICTATING MACH.	315,000
ELECTRIC STAPLERS & CHECK HANDLERS	350,000
FORMS HANDLING EQUIP.	200,000
TIME RECORDING/STAMPERS	250,000

ELECTRONIC TYPEWRITER UNIT SALES, BY KIND
(SOURCE: OFFICE EQUIPMENT)

FULL SIZE, 10K MEMORY	68,000
FULL SIZE, 8K MEMORY	486,000
FULL SIZE, SMALL MEMORY	642,000
COMPACT & PORTABLE	488,000

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1163646 Appliance 86/09/00 P72 United States
Addressing machines. avg life. (first owner usage basis).

YEAR	years
1987	7.

CC=1USA PC=3579570 EC=345

1163540 Appliance 86/09/00 P72 United States
Addressing machines. sales for. replacement.

YEAR	000 units
1986	299.
1987	350.

GROWTH RATE= 17.1%
CC=1USA PC=3579570 EC=664

1113335 Appliance 85/09/00 P57 United States
Addressing machines. avg life. (first owner usage basis).

YEAR	years
1986	7.

CC=1USA PC=3579570 EC=345

1112274 Appliance 85/09/00 P57 United States
Addressing machines. sales for. replacement.

YEAR	000 units
1985	269.4
1986	299.2

GROWTH RATE= 11.1%
CC=1USA PC=3579570 EC=664

1157606 Packaging 86/07/00 P15 United States
Bar code labelers & systems. sales. .

YEAR	MIL $
1985	650.
1990	1617.40

GROWTH RATE= 20.0%
Find/SVP
CC=1USA PC=3579648 EC=652

1122364 EDP Weekly 85/12/05 P1 United States
Business equipment. sales. .

YEAR	BIL $
1985	23.10
1986	23.9

GROWTH RATE= 3.5%
Comp & Bsns Eqp Mfrs Assn
CC=1USA PC=3579000 EC=652

1102527 Plast Eng 85/05/00 P12 United States
Business machine housings. consump of. reaction injection molded urethane.

YEAR	MIL lbs
1983	1.4
1989	10.

GROWTH RATE= 38.8%
Poole, A Mobay Chemical
CC=1USA PC=3579800,3070210 EC=465

1075918 Chem Mkt R 84/11/12 P55 United States
Business machine housings. consump of. reaction injection molded urethane.

YEAR	MIL lbs
1983	1.4
1989	10.

GROWTH RATE= 38.8%
Mobay Chemical
CC=1USA PC=3579800,3070210 EC=465

1069835 ModPlstInt 84/07/00 P10 United States
Business machine housings. consump of. plastic materials.

YEAR	000 m tons
1984	-
-	+50.
1988	

Dow Chemical
CC=1USA PC=3579800,2821000 EC=465

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

981621 US Outlook 83/01/00 P27-7 United States
Business machines NEC ind. shipments. (constant prices).

YEAR	growth/yr
1982 TO 1987	+6.%

GROWTH RATE= 6.0%
CC=1USA PC=3579000 EC=631

1190515 Wld Trade 87/01/00 P2 United States
Business Machines NEC. sales. (all business machines).

YEAR	BIL $
1985	23.10
1986	24.4
1987	26.30

GROWTH RATE= 6.7%
Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579000 EC=652

1187131 EDP Weekly 87/01/12 P4 United States
Business Machines NEC. sales. (business equip,total).

YEAR	BIL $
1985	23.1
1986	24.4
1987	26.4

GROWTH RATE= 6.9%
Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579000 EC=652

1163647 Appliance 86/09/00 P72 United States
Collating machines. avg life. (first owner usage basis).

YEAR	years
1987	7.

CC=1USA PC=3579550 EC=345

1163541 Appliance 86/09/00 P72 United States
Collating machines. sales for. replacement.

YEAR	000 units
1986	11.
1987	20.

GROWTH RATE= 81.8%
CC=1USA PC=3579550 EC=664

1113336 Appliance 85/09/00 P57 United States
Collating machines. avg life. (first owner usage basis).

YEAR	years
1986	7.

CC=1USA PC=3579550 EC=345

1112275 Appliance 85/09/00 P57 United States
Collating machines. sales for. replacement.

YEAR	000 units
1985	9.8
1986	11.2

GROWTH RATE= 14.3%
CC=1USA PC=3579550 EC=664

972265 Plast Wrld 82/11/00 P15 United States
Conductive paints. used in. business machine housings.

YEAR	MIL $
1982	22.5
1987	108.

GROWTH RATE= 36.9%
Business Communications
CC=1USA PC=2852900,3579900 EC=691

353959 Predi P58 79/06/08 P3 United States
Copier paper. used in. duplicating equipment.

YEAR	000 tons
1963	667.
1978	1610.

(cont. next page)

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1990	1750.

GROWTH RATE= .7%*
CC=1USA PC=2641620,3579300 EC=691

353954 Predi P58 79/06/08 P3 United States
Copier paper. used in. duplicating & photocopying eqp.

YEAR	000 tons
1963	715.
1978	2300.
1990	3865.

GROWTH RATE= 4.4%*
CC=1USA PC=2641620,3579300 EC=691

991732 FrostA1189 83/02/00 P4 United States
Counting scales. sales. .

YEAR	MIL $
1982	32.1
1987	76.6

GROWTH RATE= 19.0%
CC=1USA PC=3579630 EC=652

1163641 Appliance 86/09/00 P72 United States
Desk dictating machines. avg life. (first owner usage basis).

YEAR	years
1987	8.

CC=1USA PC=3579400 EC=345

1163535 Appliance 86/09/00 P72 United States
Desk dictating machines. sales for. replacement.

YEAR	000 units
1986	264.
1987	267.

GROWTH RATE= 1.1%
CC=1USA PC=3579400 EC=664

1127035 Appliance 86/01/00 P43 United States
Desk dictating machines. shipments. .

YEAR	000 units
1984	236.
1985	235.
1986	237.

GROWTH RATE= 0.9%*
CC=1USA PC=3579400 EC=631

1163643 Appliance 86/09/00 P72 United States
Dictating machine systems. avg life. (first owner usage basis).

YEAR	years
1987	9.

CC=1USA PC=3579400 EC=345

1163537 Appliance 86/09/00 P72 United States
Dictating machine systems. sales for. replacement.

YEAR	000 units
1986	24.
1987	26.

GROWTH RATE= 8.3%
CC=1USA PC=3579400 EC=664

1182028 Appliance 87/01/00 P43 United States
Dictating Machines. shipments. (systems).

YEAR	000 units
1985	23.
1986	23.
1987	23.

GROWTH RATE= 0.0%
CC=1USA PC=3579400 EC=631

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DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1182027 Appliance 87/01/00 P43 United States
Dictating Machines. shipments. (portable).

YEAR	000 units
1985	309.
1986	312.
1987	315.

GROWTH RATE= 1.0%
CC=1USA PC=3579400 EC=631

1182026 Appliance 87/01/00 P43 United States
Dictating Machines. shipments. (desk).

YEAR	000 units
1985	255.
1986	270.
1987	290.

GROWTH RATE= 6.6%
CC=1USA PC=3579400 EC=631

1054624 Comp Wkly 83/08/11 P9 United States
Dictating machines. sales. .

YEAR	MIL $
1982	289.
1983	301.
1986	365.

GROWTH RATE= 6.6%+
Input
CC=1USA PC=3579400 EC=652

1029863 Predi E90 84/03/00 P5 United States
Dictating machines. sales. .

YEAR	MIL $
1982	205.
1987	200.
1995	70.

GROWTH RATE= -7.9%
CC=1USA PC=3579400 EC=652

1023992 Electronic 84/01/12 P127 United States
Dictating machines. sales. .

YEAR	MIL $
1983	301.
1984	316.
1987	350.

GROWTH RATE= 3.8%
CC=1USA PC=3579400 EC=652

1022713 Frost 1093 83/11/00 P2 United States
Dictating machines. sales by. dealers.

YEAR	% of prodA
1982	55.
1987	70.

GROWTH RATE= 4.9%
CC=1USA PC=3579400 EC=691

976095 Electronic 83/01/13 P133 United States
Dictating machines. sales. .

YEAR	MIL $
1982	289.
1983	301.
1986	365.

GROWTH RATE= 6.0%
CC=1USA PC=3579400 EC=652

956669 Office Eqp 82/no/02 P63 United States
Dictating machines. sales. .

YEAR	000 units
1981	694.
1986	1000.+

GROWTH RATE= 7.6%
Venture Development
CC=1USA PC=3579400 EC=652

DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

951933 Predi P71 82/06/00 P6 United States
Dictation equipment. sales.

YEAR	MIL $
1980	260.
1985	300.
1995	70.

GROWTH RATE= -8.4%
CC=1USA PC=3579400 EC=652

937426 Ventr Dev 82/03/16 P1 United States
Dictation equipment. shipments.

YEAR	000 units
1981	694.
1986	1000.

GROWTH RATE= 7.6%
CC=1USA PC=3579400 EC=631

926029 EDP Weekly 81/03/02 P6 United States
Dictation equipment. expend by. hospitals.

YEAR	MIL $
1980	20.
1989	49.

GROWTH RATE= 10.5%
Frost & Sullivan
CC=1USA PC=3579400,8060000 EC=664

892780 Ec World 81/03/00 P37 United States
Dictation equipment. expend by. hospitals.

YEAR	MIL $
1980	20.
1989	49.

GROWTH RATE= 10.5%
Frost & Sullivan
CC=1USA PC=3579400,8060000 EC=664

353949 Predi P58 79/06/08 P3 United States
Duplicating equip & supplies. revenues.

YEAR	BIL $
1963	451.
1978	1860.
1990	3540.

GROWTH RATE= 5.5%*
CC=1USA PC=3579300 EC=652

1113333 Appliance 85/09/00 P57 United States
Duplicating machines. avg life. (first owner usage basis).

YEAR	years
1986	6.

CC=1USA PC=3579300 EC=345

1112272 Appliance 85/09/00 P57 United States
Duplicating machines. sales for. replacement.

YEAR	000 units
1985	102.
1986	89.1

GROWTH RATE= -12.6%
CC=1USA PC=3579300 EC=664

1082064 IRD News 84/12/04 P5 United States
Duplicating machines. shipments. .

YEAR	MIL $
1978	325.
1984	250.
1990	105.

GROWTH RATE= -13.5%*
CC=1USA PC=3579300 EC=631

1027259 Ind Week 84/07/23 P63 United States
Duplicating machines. sales. (by Japanese cos).

YEAR	% of market
1983	80.
1987	95.

GROWTH RATE= 4.4%

(cont. next page)

DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

Frost & Sullivan
CC=1USA PC=3579300 EC=652

957058 Predi P72 82/02/00 P5 United States
Duplicating machines. capacity. .

YEAR	BIL copies
1967	186.7
1980	326.8
1995	389.

GROWTH RATE= 1.2%*
CC=1USA PC=3579300 EC=445

951938 Predi P71 82/06/00 P6 United States
Duplicating machines. sales.

YEAR	MIL $
1980	256.
1985	390.
1995	510.

GROWTH RATE= 4.7%
CC=1USA PC=3579300 EC=652

806108 Appliance 79/09/00 P18 United States
Duplicating machines. in use.

YEAR	BIL copies
1978	336.
1990	375.

GROWTH RATE= .9%
CC=1USA PC=3579300 EC=665

957061 Predi P72 82/02/00 P5 United States
Duplicator industry. revenues. (incl sales,rental,svc,supplies).

YEAR	BIL $
1967	.7
1980	2.2
1995	4.7

GROWTH RATE= 5.2%*
CC=1USA PC=3579300 EC=652

923842 Tech Fore 81/12/00 P14 United States
Duplicators & copiers. leased.

YEAR	% of prodA
1981	67.
1991	68.

GROWTH RATE= 0.1%
Intnl Resource Development
CC=1USA PC=3579300 EC=693

996733 #Appliance 82/12/00 P13 United States
Duplicators. sales. .

YEAR	MIL $
1980	2248.
1995	4668.

GROWTH RATE= 5.0%
Predicasts
CC=1USA PC=3579300 EC=652

1163649 Appliance 86/09/00 P72 United States
Electric staplers & check handlers. avg life. (first owner usage basis).

YEAR	years
1987	7.

CC=1USA PC=3579682 EC=345

1163543 Appliance 86/09/00 P72 United States
Electric staplers & check handlers. sales for. replacement.

YEAR	000 units
1986	245.
1987	350.

GROWTH RATE= 42.9%
CC=1USA PC=3579682 EC=664

1113337 Appliance 85/09/00 P57 United States
Electric staplers & check handlers. avg life. (first owner usage basis).

YEAR	years

(cont. next page)

DIALOG INFORMATION SERVICES, INC.

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DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1986 7.

CC=1USA PC=3579682 EC=345

1112276 Appliance 85/09/00 P57 United States
Electric staples & check handlers. sales for. replacement.

YEAR	000 units
1985	110.
1986	245.7

GROWTH RATE= 123.4%
CC=1USA PC=3579682 EC=664

1182030 Appliance 87/01/00 P43 United States
Electric Typewriters. shipments. .

YEAR	000 units
1985	250.
1986	225.
1987	230.

GROWTH RATE= -4.1%
CC=1USA PC=3579720 EC=631

1127039 Appliance 86/01/00 P43 United States
Electric typewriters. shipments. .

YEAR	000 units
1984	500.
1985	420.
1986	390.

GROWTH RATE= -7.1%
CC=1USA PC=3579720 EC=631

1095369 Boxbrd Con 85/03/00 P88 United States
Electric typewriters. shipments. .

YEAR	000 units
1984	400.
1987	100.

GROWTH RATE= -37.0%
Dataquest
CC=1USA PC=3579720 EC=631

972269 Plast Wrld 82/11/00 P15 United States
Electroconductive plastics. used in. business machine housings.

YEAR	MIL $
1987	40.

Business Communications
CC=1USA PC=2821094,3579900 EC=691

1192434 Purchasing 87/04/00 P38 United States
Electronic Typewriters ex Intelignt. retail price. .

YEAR	Index
1987	100.
1990	77.

GROWTH RATE= -8.3%
Computer & Business Equip Mfrs Assn
CC=1USA PC=3579730 EC=743

1182031 Appliance 87/01/00 P43 United States
Electronic Typewriters ex Intelignt. shipments. .

YEAR	000 units
1985	1210.
1986	1300.
1987	1400.

GROWTH RATE= 7.6%
CC=1USA PC=3579730 EC=631

1181371 Office Eqp 87/01/00 P50 United States
Electronic Typewriters ex Intelignt. sales. .

YEAR	000 units
1986	3066.
1987	3192.
1990	2871.

GROWTH RATE= -1.6%
CC=1USA PC=3579730 EC=652

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1181370 Office Eqp 87/01/00 P50 United States
Electronic Typewriters ex Intellgnt. sales. (portable).

YEAR	000 units
1986	1866.
1987	1996.
1990	1871.

GROWTH RATE= 0.1%
CC=1USA PC=3579730 EC=652

1181369 Office Eqp 87/01/00 P50 United States
Electronic Typewriters ex Intellgnt. sales. (compact).

YEAR	000 units
1986	1186.
1987	1291.
1990	1191.

GROWTH RATE= 0.1%
CC=1USA PC=3579730 EC=652

1177243 Electronic 87/01/08 P55 United States
Electronic Typewriters ex Intellgnt. sales.

YEAR	MIL $
1985	1210.
1986	1267.
1987	1331.

GROWTH RATE= 4.9%
CC=1USA PC=3579730 EC=652

1167653 Purchasing 86/10/00 P14 United States
Electronic typewriters. sales. (value).

YEAR	growth/yr
1985 TO 1995	+12.%

GROWTH RATE= 12.0%
Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579730 EC=652

1167652 Purchasing 86/10/00 P14 United States
Electronic typewriters. sales. (units).

YEAR	growth/yr
1985 TO 1995	+3.%

GROWTH RATE= 3.0%
Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579730 EC=652

1163651 Appliance 86/09/00 P72 United States
Electronic typewriters. avg life. (first owner usage basis).

YEAR	years
1987	8.

CC=1USA PC=3579730 EC=345

1163545 Appliance 86/09/00 P72 United States
Electronic typewriters. sales for. replacement.

YEAR	000 units
1986	1092.
1987	1113.

GROWTH RATE= 1.9%
CC=1USA PC=3579730 EC=664

1157595 Elec Mkt 86/00/00 P76 United States
Electronic typewriters. sales.

YEAR	BIL $
1985	.8
1989	2.1

GROWTH RATE= 27.3%
Intnl Data
CC=1USA PC=3579730 EC=652

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DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1127313 Appliance 86/01/00 P47 United States
Electronic typewriters. sales. .

YEAR	MIL $
1985	1150.0
1986	1250.

GROWTH RATE= 8.7%
Henriques, VE pres,Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579730 EC=652

1127040 Appliance 86/01/00 P43 United States
Electronic typewriters. shipments. .

YEAR	000 units
1984	780.
1985	990.
1986	1100.

GROWTH RATE= 11.1%*
CC=1USA PC=3579730 EC=631

1126562 Electronic 86/01/06 P43 United States
Electronic typewriters. sales. .

YEAR	MIL $
1984	865.
1985	1210.
1986	1285.

GROWTH RATE= 6.2%*
CC=1USA PC=3579730 EC=652

1122365 EDP Weekly 85/12/05 P1 United States
Electronic typewriters. sales. .

YEAR	MIL $
1985	1150.0
1986	1250.

GROWTH RATE= 8.7%
Comp & Bsns Eqp Mfrs Assn
CC=1USA PC=3579730 EC=652

1121199 Fortune 85/10/14 P60 United States
Electronic typewriters. shipments. (for office automation).

YEAR	MIL $
1984	720.0
1989	2120.0

GROWTH RATE= 24.1%
Intnl Data
CC=1USA PC=3579730 EC=631

1095368 Boxbrd Con 85/03/00 P88 United States
Electronic typewriters. shipments. .

YEAR	000 units
1983	510.
1984	700.
1987	1000.

GROWTH RATE= 12.6%*
Dataquest
CC=1USA PC=3579730 EC=631

1075510 Office Eqp 84/07/00 P40 United States
Electronic typewriters. sales. (full size,10k memory).

YEAR	MIL $
1983	49.
1985	79.
1987	103.

GROWTH RATE= 20.4%
Dataquest
CC=1USA PC=3579730 EC=652

1075509 Office Eqp 84/07/00 P40 United States
Electronic typewriters. sales. (full size,2 8k memory).

YEAR	MIL $
1983	254.
1985	430.
1987	496.

GROWTH RATE= 18.2%
Dataquest

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DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

CC=1USA PC=3579730 EC=652
1075508 Office Eqp 84/07/00 P40 United States
Electronic typewriters. sales. (full size,small memory).

YEAR	MIL $
1983	152.
1985	383.
1987	417.

GROWTH RATE= 28.7%
Dataquest
CC=1USA PC=3579730 EC=652

1075507 Office Eqp 84/07/00 P40 United States
Electronic typewriters. sales. (compact & portable).

YEAR	MIL $
1983	100.
1985	121.
1987	121.

GROWTH RATE= 4.9%
Dataquest
CC=1USA PC=3579730 EC=652

1075506 Office Eqp 84/07/00 P40 United States
Electronic typewriters. sales. (1 10 cps,incl TTP).

YEAR	MIL $
1983	66.
1985	79.
1987	79.

GROWTH RATE= 4.6%
Dataquest
CC=1USA PC=3579730 EC=652

1075505 Office Eqp 84/07/00 P40 United States
Electronic typewriters. shipments. (full size,10k memory).

YEAR	000 units
1983	38.
1985	57.
1987	68.

GROWTH RATE= 15.7%
Dataquest
CC=1USA PC=3579730 EC=631

1075504 Office Eqp 84/07/00 P40 United States
Electronic typewriters. shipments. (full size,2 8k memory).

YEAR	000 units
1983	222.
1985	433.
1987	486.

GROWTH RATE= 21.6%
Dataquest
CC=1USA PC=3579730 EC=631

1075503 Office Eqp 84/07/00 P40 United States
Electronic typewriters. shipments. (full size,small memory).

YEAR	000 units
1983	242.
1985	581.
1987	642.

GROWTH RATE= 27.6%
Dataquest
CC=1USA PC=3579730 EC=631

1075502 Office Eqp 84/07/00 P40 United States
Electronic typewriters. shipments. (compact & portable).

YEAR	000 units
1983	374.
1985	488.
1987	488.

GROWTH RATE= 6.9%
Dataquest
CC=1USA PC=3579730 EC=631

1075501 Office Eqp 84/07/00 P40 United States
Electronic typewriters. shipments. (1 10 cps,incl TTP).

YEAR	000 units
1983	524.

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DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1985 630.
1987 630.

GROWTH RATE= 4.7%
Dataquest
CC=1USA PC=3579730 EC=631

1075244 Telephone 84/06/01 P164 United States
Electronic typewriters. shipments. .

YEAR MIL $

1983 577.
1984 712.
1987 1423.

GROWTH RATE= 26.0%*
Elliott, TR dir rsrch,Intnl Data
CC=1USA PC=3579730 EC=631

1069412 Frost 1118 84/08/00 P2 United States
Electronic typewriters. shipments. (units).

YEAR growth/yr

1983 -
- +50.%
1988 -

GROWTH RATE= 50.0%
CC=1USA PC=3579730 EC=631

1069411 Frost 1118 84/08/00 P2 United States
Electronic typewriters. sales. .

YEAR MIL $

1983 3000.
1988 4200.

GROWTH RATE= 7.0%
CC=1USA PC=3579730 EC=652

1056723 Geyer OD 84/07/00 P23 United States
Electronic typewriters. sales. .

YEAR 000 units

1983 502.
1988 1200.

GROWTH RATE= 19.0%
Lindsey, CM analyst,Dataquest
CC=1USA PC=3579730 EC=652

1054625 Comp Wkly 83/08/11 P9 United States
Electronic typewriters. sales. .

YEAR MIL $

1982 410.
1983 465.
1986 770.

GROWTH RATE= 18.3%*
Input
CC=1USA PC=3579730 EC=652

1049643 Ind Week 84/06/11 P59 United States
Electronic typewriters. sales. .

YEAR 000 units

1983 503.
1988 1200.0

GROWTH RATE= 19.0%
Lindsey, CM analyst,Dataquest
CC=1USA PC=3579730 EC=652

1033223 Ind Week 84/02/20 P64 United States
Electronic typewriters. sales. .

YEAR MIL units

1987 1.2

Intnl Data
CC=1USA PC=3579730 EC=652

1023993 Electronic 84/01/12 P127 United States
Electronic typewriters. sales. .

YEAR MIL $

1983 465.
1984 535.
1987 700.

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DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

GROWTH RATE= 10.8%
CC=1USA PC=3579730 EC=652

1017637 Computrwld 83/09/05 P73 United States
Electronic typewriters. sales. .

YEAR	growth/yr
1982	-
TO	+32.1%
1987	-

GROWTH RATE= 32.1%
Intnl Data
CC=1USA PC=3579730 EC=652

976096 Electronic 83/01/13 P133 United States
Electronic typewriters. sales. .

YEAR	MIL $
1982	410.
1983	465.
1986	770.

GROWTH RATE= 17.1%
CC=1USA PC=3579730 EC=652

968773 Fortune 82/10/18 P36 United States
Electronic typewriters. in use by. business.

YEAR	MIL units
1986	3.

Intnl Data
CC=1USA PC=3579730 EC=665

968761 Fortune 82/10/18 P44 United States
Electronic typewriters. sales. .

YEAR	MIL $
1980	240.
1986	1080.

GROWTH RATE= 28.5%
Intnl Data
CC=1USA PC=3579730 EC=652

968482 EDP 82/09/22 P12 United States
Electronic typewriters. sales. .

YEAR	MIL $
1981	345.0
1986	1120.

GROWTH RATE= 26.6%
CC=1USA PC=3579730 EC=652

960209 Fortune 82/05/03 P184 United States
Electronic typewriters. sales. .

YEAR	MIL $
1981	275.
1986	1200.

GROWTH RATE= 34.3%
Dataquest
CC=1USA PC=3579730 EC=652

958814 Ventr Dev 82/07/09 P1 United States
Electronic typewriters. shipments. .

YEAR	000 units
1982	315.
1987	1900.

GROWTH RATE= 43.2%
CC=1USA PC=3579730 EC=631

923839 Tech Fore 81/12/00 P14 United States
Electronic typewriters. leased.

YEAR	% of prodA
1981	40.
1991	45.

GROWTH RATE= 1.2%
Intnl Resource Development
CC=1USA PC=3579702 EC=693

1117648 Frost 1210 85/10/00 P2 United States
Folding machines. sales to. insurance companies.

YEAR	units

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DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1984 -
TO 1785.
1989 -

CC=1USA PC=3579534,6300000 EC=664

1117646 Frost 1210 85/10/00 P2 United States
Folding machines. expend by. insurance companies.

YEAR MIL $

1984 -
TO 89.3
1989 -

CC=1USA PC=3579534,6300000 EC=664

1163645 Appliance 86/09/00 P72 United States
Forms handling equipment. avg life. (first owner usage basis).

YEAR years

1987 6.

CC=1USA PC=3579650 EC=345

1163539 Appliance 86/09/00 P72 United States
Forms handling equipment. sales for. replacement.

YEAR 000 units

1986 163.
1987 200.

GROWTH RATE= 22.7%
CC=1USA PC=3579650 EC=664

1113334 Appliance 85/09/00 P57 United States
Forms handling equipment. avg life. (first owner usage basis).

YEAR years

1986 6.

CC=1USA PC=3579650 EC=345

1112273 Appliance 85/09/00 P57 United States
Forms handling equipment. sales for. replacement.

YEAR 000 units

1985 100.
1986 162.9

GROWTH RATE= 62.9%
CC=1USA PC=3579650 EC=664

926028 EDP Weekly 81/03/02 P6 United States
Hospitals. expend for. dictation systems.

YEAR MIL $

1980 20.
1989 49.

GROWTH RATE= 10.5%
Frost & Sullivan
CC=1USA PC=8060000,3579400 EC=437

892779 Ec World 81/03/00 P37 United States
Hospitals. expend for. dictation equipment.

YEAR MIL $

1980 20.
1989 49.

GROWTH RATE= 10.5%
Frost & Sullivan
CC=1USA PC=8060000,3579400 EC=437

1117647 Frost 1210 85/10/00 P2 United States
Insurance companies. purchase of. folding machines.

YEAR units

1984 -
TO 1785.
1989 -

CC=1USA PC=6300000,3579534 EC=437

1117645 Frost 1210 85/10/00 P2 United States
Insurance companies. expend for. folding machines.

YEAR MIL $

(cont. next page)

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DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1984 -
TO 89.3
1989 -

CC=1USA PC=6300000,3579534 EC=437

1117643 Frost 1210 85/10/00 P2 United States
Insurance companies. expend for. office collators.

YEAR MIL $

1984 -
TO 52.4
1989 -

CC=1USA PC=6300000,3579550 EC=437

1117641 Frost 1210 85/10/00 P2 United States
Insurance companies. purchase of. office collators.

YEAR units

1984 -
TO 2095.
1989 -

CC=1USA PC=6300000,3579550 EC=437

1117639 Frost 1210 85/10/00 P2 United States
Insurance companies. purchase of. paper inserters.

YEAR units

1984 -
TO 1725.
1989 -

CC=1USA PC=6300000,3579533 EC=437

1117637 Frost 1210 85/10/00 P2 United States
Insurance companies. expend for. paper inserters.

YEAR MIL $

1984 -
TO 86.3
1989 -

CC=1USA PC=6300000,3579533 EC=437

923844 Tech Fore 81/12/00 P14 United States
Mail room equipment. leased.

YEAR % of prodA

1981 60.
1991 40.

GROWTH RATE= 0.0%
Intnl Resource Development
CC=1USA PC=3579901 EC=693

1127041 Appliance 86/01/00 P43 United States
Manual typewriters. shipments. .

YEAR 000 units

1984 12.
1985 10.
1986 9.

GROWTH RATE= -10.0%*
CC=1USA PC=3579710 EC=631

1017540 Tech Fore 83/06/00 P14 United States
Non electronic records mgmt eqp. shipments. .

YEAR BIL 82$

1982 2.2
1987 3.3

GROWTH RATE= 8.4%
Frost & Sullivan
CC=1USA PC=3579900 EC=631

1117644 Frost 1210 85/10/00 P2 United States
Office collators. expend by. insurance companies.

YEAR MIL $

1984 -
TO 52.4
1989 -

CC=1USA PC=3579550,6300000 EC=664

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DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1117642 Frost 1210 85/10/00 P2 United States
Office collators. sales to. insurance companies.

YEAR	units
1984 TO 1989	2095.

CC=1USA PC=3579550,6300000 EC=664

1167649 Purchasing 86/10/00 P14 United States
Office copiers. sales. (value).

YEAR	growth/yr
1985 TO 1995	+3.%

GROWTH RATE= 3.0%
Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579300 EC=652

1167648 Purchasing 86/10/00 P14 United States
Office copiers. sales. (units).

YEAR	growth/yr
1985 TO 1995	+12.%

GROWTH RATE= 12.0%
Computer & Bsns Eqp Mfrs Assn
CC=1USA PC=3579300 EC=652

1082060 IRD News 84/12/04 P5 United States
Office dictation machines. shipments. .

YEAR	MIL $
1978	125.
1984	152.
1990	61.

GROWTH RATE= -14.1%*
CC=1USA PC=3579401 EC=631

1017539 Tech Fore 83/06/00 P14 United States
Office filing equipment. shipments. .

YEAR	BIL 82$
1982	1.7
1987	2.6

GROWTH RATE= 8.9%
Frost & Sullivan
CC=1USA PC=3579900 EC=631

1082059 IRD News 84/12/04 P5 United States
Office typewriters. shipments. .

YEAR	MIL $
1978	905.
1984	970.
1990	495.

GROWTH RATE= -10.6%*
CC=1USA PC=3579710 EC=631

951928 Predi P71 82/06/00 P6 United States
Office typewriters. sales.

YEAR	MIL $
1980	1032.
1985	1320.
1995	2200.

GROWTH RATE= 5.2%
CC=1USA PC=3579700 EC=652

923659 Office Eqp 81/no/06 P49 United States
Office typewriters. sales.

YEAR	BIL $
1983	1.
1989	2.1

GROWTH RATE= 13.2%
Natl Office Products Assn
CC=1USA PC=3579700 EC=652

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DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

951940 Predi P71 82/06/00 P6 United States
Offset duplicators. sales.

YEAR	MIL $
1980	141.
1985	210.
1995	300.

GROWTH RATE= 5.2%
CC=1USA PC=3579300 EC=652

1117640 Frost 1210 85/10/00 P2 United States
Paper inserters. sales to. insurance companies.

YEAR	units
1984 TO 1989	1725.

CC=1USA PC=3579533,6300000 EC=664

1117638 Frost 1210 85/10/00 P2 United States
Paper inserters. expend by. insurance companies.

YEAR	MIL $
1984 TO 1989	86.3

CC=1USA PC=3579533,6300000 EC=664

1069836 ModPlstInt 84/07/00 P10 United States
Plastic materials. used in. business machine housings.

YEAR	000 m tons
1984 - 1988	+50.

Dow Chemical
CC=1USA PC=2821000,3579800 EC=691

997098 Chem Mkt R 83/04/25 P5 United States
Plastic materials. used in. business machine housings.

YEAR	growth/yr
1980 TO 1990	+15.%

GROWTH RATE= 15.0%
Dow Chemical
CC=1USA PC=2821000,3579800 EC=691

972273 Plast Wrld 82/11/00 P15 United States
Plastic materials. used in. business machine housings.

YEAR	MIL lbs
1982	75.
1987	150.

GROWTH RATE= 14.9%
Business Communications
CC=1USA PC=2821000,3579900 EC=691

1163642 Appliance 86/09/00 P72 United States
Portable dictating machines. avg life. (first owner usage basis).

YEAR	years
1987	7.

CC=1USA PC=3579400 EC=345

1163536 Appliance 86/09/00 P72 United States
Portable dictating machines. sales for. replacement.

YEAR	000 units
1986	315.
1987	311.

GROWTH RATE= -1.3%
CC=1USA PC=3579400 EC=664

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DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1127036 Appliance 86/01/00 P43 United States
Portable dictating machines. shipments. .

YEAR	000 units
1984	308.
1985	315.
1986	330.

GROWTH RATE= 4.8%*
CC=1USA PC=3579400 EC=631

1033222 Ind Week 84/02/20 P64 United States
Removable memory elec typewriters. shipments. as % of all elec typewriters.

YEAR	% of total
1987	1.

Intnl Data
CC=1USA PC=3579730 EC=631

951939 Predi P71 82/06/00 P6 United States
Stencil & spirit duplicators. sales.

YEAR	MIL $
1980	115.
1985	180.
1995	210.

GROWTH RATE= 4.1%
CC=1USA PC=3579300 EC=652

1127037 Appliance 86/01/00 P43 United States
Systems dictating equip. shipments. .

YEAR	000 units
1984	26.
1985	22.
1986	23.

GROWTH RATE= 4.5%*
CC=1USA PC=3579400 EC=631

1163650 Appliance 86/09/00 P72 United States
Time recording & stamping machines. avg life. (first owner usage basis).

YEAR	years
1987	9.

CC=1USA PC=3579682 EC=345

1163544 Appliance 86/09/00 P72 United States
Time recording & stamping machines. sales for. replacement.

YEAR	000 units
1986	173.
1987	250.

GROWTH RATE= 44.5%
CC=1USA PC=3579682 EC=664

1113338 Appliance 85/09/00 P57 United States
Time recording & stamping machines. avg life. (first owner usage basis).

YEAR	years
1986	9.

CC=1USA PC=3579682 EC=345

1112277 Appliance 85/09/00 P57 United States
Time recording & stamping machines. sales for. replacement.

YEAR	000 units
1985	110.
1986	173.5

GROWTH RATE= 57.7%
CC=1USA PC=3579682 EC=664

1029862 Predi E90 84/03/00 P5 United States
Typewriters. sales. .

YEAR	MIL $
1982	1065.
1987	1320.

(cont. next page)

DIALOG INFORMATION SERVICES, INC.

DIALOG File 81: PTS US Forecasts - 71-87/May (Copr. Predicasts Inc. 1987)

1995 1870.

GROWTH RATE= 4.4%
CC=1USA PC=3579700 EC=652

1073966 ElectrncWk 84/10/22 P84 United States
Voice activated typewriters. sales. .

YEAR	BIL $
1989	1.+

Withington, T Little (Arthur D)
CC=1USA PC=3579740 EC=652

1073965 ElectrncWk 84/10/22 P84 United States
Voice activated typewriters. sales. .

YEAR	BIL $
1989	5.

Kurzweil Applied Intelligence
CC=1USA PC=3579740 EC=652

982049 Tech Fore 83/01/00 P1 United States
Voice activated typewriters. retail price. .

YEAR	000 $/unit
1987	20.0

Intnl Resource Development
CC=1USA PC=3579740 EC=743

969231 Mini Micro 82/10/00 P169 United States
Voice activated typewriters. shipments. .

YEAR	MIL $
1983	5.
1984	72.
1989	3500.

GROWTH RATE= 198.0%
Intnl Resource Development
CC=1USA PC=3579740 EC=631

967087 Elec Eng T 82/09/01 P33 United States
Voice activated typewriters. sales. .

YEAR	BIL $
1989	3.5

Intnl Resource Development
CC=1USA PC=3579740 EC=652

946890 Elec Busns 82/04/00 P120 United States
Voice activated typewriters. shipments.

YEAR	MIL $
1983	5.
1984	72.
1989	3500.

GROWTH RATE= 198.0%
Intnl Resource Development
CC=1USA PC=3579702 EC=631

991741 FrostA1189 83/02/00 P4 United States
Weigh price labelers. sales. .

YEAR	MIL $
1982	64.2
1987	129.1

GROWTH RATE= 15.0%
CC=1USA PC=3579642 EC=652

972263 Plast Wrld 82/11/00 P15 United States
Zinc arc spray. consump by. business machine housings.

YEAR	MIL $
1982	44.
1987	120.

GROWTH RATE= 22.2%
Business Communications
CC=1USA PC=3471008,3579900 EC=691

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TRENDS IN MAJOR END-USER MARKETS

The U.S. Bureau of Labor Statistics reported that the American labor force required 10.96 million workers in **office** occupations as of 1985, compared to 8.05 million in 1974. This is a 36% expansion over the decade. Following were the BLS projected requirements, for selected office occupations.....

Secretaries, stenographers	4,860,000
Typists	1,400,000
Bank clerks	718,000
Bank officers	333,000
Bank tellers	377,000
Insurance agents, brokers, underwriters	536,000
Accountants	995,000
Lawyers	490,000
Public relations workers	134,000

Some 1995 projections for other white collar sectors are also furnished by the BLS.....

	1982	1990	1995	Avg. Annual Growth, 1990-95
	(Number Employed-Thousand)			
Banking	1,655	1,954	2,120	1.6%
Credit agencies	1,038	1,350	1,518	2.4
Insurance	1,870	2,169	2,272	0.9
Miscellaneous business	3,743	5,172	6,183	3.6
Government	15,803	16,750	17,230	0.6
Miscell. professional	2,147	2,640	3,004	2.6

The Census Bureau's quinnenial Census of Service Industries reported that persons employed by the sector known as: "management, consulting and public relations services" grew from 81,902 in 1972 to 143,800 by 1977

Continued.....

and 267,913 by 1982. No doubt, with the rising popularity of the entrepreneur in today's economy, this number will rise significantly with the publication of 1987 census figures.

In the **banking** sector, the actual number of savings **institutions** has declined from 4,677 in 1972 to 3,550 by 1984. But the number of ***offices*** has risen, as follows:

1972	11,643
1975	16,161
1978	20,498
1980	23,575
1981	24,667
1982	24,727
1983	25,010
1984	25,019

New business formations/new incorporations have also increased.....

1975	326,000
1978	478,000
1981	582,000
1984	635,000

All of the above statistics point to the fact that more new and replacement office machines will be needed to satisfy the demands of these workers. **Individual workers** such as secretaries, lawyers, accountants, bankers, stock brokers, real estate agents, insurance agents, and others need typewriters, word processors, calculators, dictating machines, etc. **Offices in general** need copiers, mail processing equipment, facsimile machines, and duplicators.

Sole proprietors and small business owners now working at home need much of the same equipment-calculators, personal copiers, typewriters, computer printers, etc. but on a smaller scale than corporate America. All are concerned with getting the best value for their money, and buying machines that incorporate the latest technology, which hopefully will increase their productivity and ability to meet workloads. Good time management and fast response time/customer service is critical in today's business environment. Due to heavy merger activity in

Continued.....

large corporations, and staff cut-backs at many more in an effort to trim costs and remain competitive, **remaining** employees are being asked to handle larger workloads. Business machines that help them achieve this will be welcomed.

A 1982/83 National Research Study on the Quick Printing Industry, sponsored by the NAPL (National Assoc. of Quick Printers), would be of interest to photocopy machine producers. In this section are several tables which provide a view of the quick print industry structure and their plans for purchasing equipment such as copiers and duplicators. The quick copy market was estimated to be worth over $3 billion as of 1983, generated by about 13,000 shops.

The study reported that several trends were evident:

1) Copier cost, performance and technology are the major forces spurring growth of in-house copying.

2) Laser printing will be the driving force for improvements in copier printing quality. Many small businesses are expected to purchase or lease such copiers over the next few years.

3) The high speed copy duplicator is one of the most important "new" technology-based production/services that a quick printer can add in order to remain competitive.

4) Color copier technology is developing slowly and does not appear to provide a significant technology-based business alternative for quick printers in the short term. However, it may provide a way to distinguish quick printers from commercial houses.

5) Offset duplicator technology will improve, as suppliers enhance user friendliness, ease of use, and automation capabilities.

6) Camera technology improvements, particularly for electronic exposure, sizing, etc. and lens options, will enhance capabilities and performance. By 1986-87, integrated electronic "pre-press" systems were forecast to emerge, encompassing camera, typesetting and word processing and plate preparation.

7) Intelligent printers are emerging as an economical terminal-to-copier device for large companies.

Quick Print Market Structure

Type	Sales Dollar Range	Percent of Industry	# Shops	Estimated Dollar Sales (millions)
Small	100k	17.5%	2,300	$195.5
Medium	100-200k	37.5	4,900	735.0
Medium	201-300k	30.0	3,900	975.0
Large	301-400k	5.5	700	245.0
Large	401-500k	3.5	450	202.5
Large	501-700k	2.0	250	150.0
Very large	701-1,000k	2.0	250	212.5
Very large	$1 million plus	2.0	250	300.0
	TOTAL	100.0%	13,000	3,015.5

Percentage of Quick Printers Planning Selected Equipment Acquisitions and Their Purpose

Service	Percentage Quick Printers Planning to Acquire	Purpose		
		% Planning A New Service	% Planning A Replacement	% Planning An Addition
Low-Medium Volume Copiers	13.0%	3.0%	7.5%	4.0%
Color Copiers	.8%	.6%	.1%	.1%
Copy Duplicators	14.0%	5.0%	5.6%	3.0%
Offset	37.0%	10.0%	8.0%	21.0%
Platemakers				
1. Silver Halide	2.0%	0.0%	2.0%	.1%
2. Electrostatic	10.0%	5.0%	4.0%	2.0%
Plate Burner	3.0%	5.0%	.6%	.2%
Camera Equipment	8.0%	4.0%	1.0%	2.0%
Typesetters	3.0%	5.0%	1.0%	1.0%
Word Processors	3.0%	1.5%	.1%	.9%

THE OFFICE MACHINERY INDUSTRY

GROWTH OF TELEPHONE-COUPLED OFFICE FACSIMILE
IN THE UNITED STATES AND CANADA

	INSTALLED TERMINALS (Thous.)	TRAFFIC IN PAGES/YEAR (Million)	TOTAL MARKET* ($ Mill.)	AVERAGE DELIVERED COST/PAGE (Dollars)
1966	$2.0	$1.00	3.36	$3.36
1967	4	$2.00	6.66	3.32
1968	5.3	2.66	8.82	3.32
1969	9.6	6.22	18.48	2.97
1970	18.9	11.6	31.5	2.73
1971	40	22.5	58.3	2.59
1972	62	36.5	91.1	$2.50
1973	83	53.7	128.5	$2.40
1974	94	74.8	169.9	2.27
1975	112	105.4	227.4	2.26
1976	122	132.6	269	2.03
1977	135	169	320	1.89
1978	166.8	235	401	1.71
1979	207.9	423	494	1.17
1980	241	703	623	0.89
1981	295	1,021	789	0.77
ESTIMATE				
1982	333	1,426	959	0.67

* Includes terminals, supplies, and communications carrier revenues

SOURCE: GMS CONSULTING

THE TOP 50 PROJECTED METRO MARKETS IN 1990

1990 RANK, MARKET	PROJECTED 1990 POPULATION (Thous.)	PROJECTED % CHANGE 1985-1990
1. LOS ANGELES-LONG BEACH	8,634.9	6.7
2. NEW YORK	8,570.2	1.6
3. CHICAGO	6,173.2	0.8
4. PHILADELPHIA	4,880.7	1.5
5. DETROIT	4,353.6	-0.2
6. BOSTON-LAWRENCE-LOWELL-BROCKTON	3,738.0	0.9
7. WASHINGTON, DC	3,706.7	6.1
8. HOUSTON	3,3637.0	13.3
9. NASSAU-SUFFOLK	2,787.2	3.2
10. ATLANTA	2,746.2	11.6
11. DALLAS	2,610.6	13.7
12. ST. LOIUS	2,437.9	0.9
13. SAN DIEGO	2,395.1	11.9
14. BALTIMORE	2,367.8	3.3
15. MINNEAPOLIS-ST. PAUL	2,357.5	4.6
16. ANAHEIM-SANTA ANA, CA	2,292.3	7.9
17. RIVERSIDE-SAN BERN., CA	2,196.5	15.8
18. PITTSBURGH	2,142.7	-1.7
19. PHOENIX	2,135.5	16
20. TAMPA-ST. PETERSBURG-CLEARWATER, FL	2,091.8	11.9
21. OAKLAND, CA	2,022	6.2
22.MIAMI-HIALEAH	1,902.5	7.4
23. NEWARK, NJ	1,881.1	NC
24. CLEVELAND	1,845.3	-1.5
25. DENVER	1,822.9	11.5
26. SEATTLE	1,8189	5.8
27. SAN FRANCISCO	1,617.2	3.9
28. KANSAS CITY, MO-KS	1,546.8	3.3
29. SAN JOSE, CA	1,483.8	6.5

TABLE CONTINUED....

THE TOP 50 PROJECTED METRO MARKETS IN 1990

TABLE CONTINUED.....

1990 RANK, MARKET	PROJECTED 1990 POPULATION (Thous.)	PROJECTED % CHANGE 1985-1990
30. NEW ORLEANS	1,428.1	5.9
31. SACRAMENTO, CA	1,14.8	11.7
32. CINCINNATI	1,404.8	-0.1
33. MILWAUKEE	1,399.7	-0.1
34. NORFOLK-VIRGINIA BEACH-NEWPORT NEWS	1,379.6	7.1
35. FT. WORTH-ARLINGTON, TX	1,362.7	15.9
36. SAN ANTONIO, TX	1,332.6	10.2
37. COLUMBUS, OH	1,25.1	2.8
38. BERGEN-PASSAIC, NJ	1,292.2	-0.1
39. FT. LAUDERDALE-HOLLYWOOD-POMPANO BEACH, FL	1,283.9	10.8
40. INDIANAPOLIS	1,241.2	2.7
41. PORTLAND, OR	1,180.6	2.7
42. SALT LAKE CITY-OGDEN, UT	1,159.4	11
43. CHARLOTTE-GASTONIA-ROCK HILL, NC-SC	1,116.1	6.4
44. OKLAHOMA CITY, OK	1,096.5	11.4
45. HARTFORD-NEW BRITAIN-MIDDLETOWN-BRISTOL, CT	1,095.7	1.9
46. MONMOUTH-OCEAN, NJ	1,028.3	8.7
47. ROCHESTER, NY	1,027	2.6
48. ORLANDO, FL	1,010.4	16.9
49. LOUISVILLE, KY	978	0.7
50. MIDDLESEX-SOMERSET-HUNTERDON, NJ	974.1	4.3

NC - NO CHANGE

SOURCE: 1986 SALES & MARKETING MANAGEMENT
SURVEY OF BUYING POWER

WORLD TRADE IN OFFICE MACHINES
TRENDS IN EXPORT MARKETS AND IMPORT COMPETITION

The following section provides an analysis of United States' producers exports and imports of various types of office machines, from 1979-86. Both imports and exports information is not always available for each machine. However, there is a great deal of useful information, by machine, by country of destination (for exports) and by country of origin (for import competition). The value of exports is expressed in terms of the actual value of the machine plus "customs, insurance, and freight". The value of imports is expressed in terms of "imports for consumption" by the Department of Commerce. Exports dollar volume is compared by Marketdata to domestic sales, while imports are compared to "apparent consumption" (imports plus domestic sales, less exports).

EXPORTS TRENDS

Total exports of all office machines covered by this study are estimated to have been worth over $1.2 billion during 1986., based on six-month activity from January-June. Fully 37% of this overseas market was for computer printers, 27% for photocopiers and parts, 15% for typewriters and parts--a total of 79% just for these three machinery lines. Following is a ranking of 1985 exports, by type machine, related to their U.S. sales volume.....

Machine	Exports As % U.S. Sales
Parts For Machines	70.3%
Duplicators	22.3
Computer Printers	20.1
Mailing, Letter Handling & Other	14.5
Typewriters & Word Processors	7.9
Addressing Machines	7.3
Check Handlers	5.3
Copiers & parts	3.6
Calculators	2.5

Computer Printers accounted for $461 million of U.S. exports in **1985,** the largest volume of any office machinery category. This was followed by **Photocopiers** and parts, which accounted for $339 million of the total in 1986. **Typewriters, Word Processors** and parts constituted a $196 million export market, **Duplicating Machines** and parts--$36 million,

Continued.....

Calculators--$19 million, **Check Writing Machines**--$6 million, **Addressing Machines**--$5 million, and a large $162 million for the Commerce Department's "catch-all" category-**Miscellaneous Other Office Machines.**

COMPUTER PRINTERS

Computer printer exports rose from $188 million in 1979 to the $400 million plus level from 1982 on, hitting $461 million in 1985. This represented 20% of domestic sales volume.

TYPEWRITERS (Portable & Standard) & WORD PROCESSORS

Typewriters exports have risen from $18.2 million in 1979 to an estimated $67.4 million by 1986. The 1986 level is expected to represent a drop of 32% from 1985. Word processors exports totalled $83.9 million in 1979, reached a peak $153.5 million during 1981, then dropped steadily to $49.9 million by 1985.

By country of destination, 21% of typewriters and word processor exports were shipped to Canada in 1986, followed primarily by European nations and Japan. Five nations accounted for nearly 48% of the total volume. For typewriter ***parts*** exports, worth $128 million, 42% of the dollar volume was to the Netherlands, 14% to Mexico, and 9% to Canada. European nations accounted for the bulk of the remainder. Six nations together accounted for 84% of parts exports. Typewriter/word processor exports represented approximately 10.5% of U.S. sales in 1985.

PHOTOCOPIERS & PARTS

Historical information about copy machines is difficult to come by, but 1986 information was available. Based upon half-year activity, Marketdata estimates that U.S. companies exported $339 million worth of photocopy machines and related parts--$110 million in machines and $229 million in parts. About 48% of machinery exports were slated for Canada, and about 20% of the parts business. Next most important was Venezuela with 10% of the machinery volume. Almost 84% of machinery volume was accounted for by seven nations--the remainder in Europe, South America and Japan. An additional 19% of the substantial overseas parts market was located in West Germany, 13% each in France and the Netherlands.

Continued.....

DUPLICATING MACHINES & PARTS

Duplicating machine exports volume is estimated at $36 million for 1986, not much change from the $35.7 million of 1985. In fact, since 1979 exports volume has never exceeded $57.7 million. For 1985 it is estimated that duplicating machines exports represented 22.4% of U.S. sales. Historically, **Offset & Other** type duplicators have accounted for the lion's share of exports, 96% in 1984. **Spirit** types accounted for less than 1% and **Stencil** types for 2.5% during 1985.

Belgium was the destination of 23% of duplicating machine/parts exports during 1986, followed by the Netherlands at roughly 18%. Japan, Canada and England accounted for the bulk of the remainder. Five nations accounted for 66% of the estimated 1986 export activity.

DICTATING MACHINES

Dictating machine export volume is small, ranging from $1.5-6.2 million from 1980-85. The market is largely supplied by ***imports***, which totalled $13.4 million in 1985 and were as high as $191 million in 1984. Imports have represented 80-99% of "apparent consumption". No information is available for exports by country of destination--it is buried in an "all other machines" category.

ADDRESSING MACHINES

Addressing machine exports were estimated to reach $5.3 million in 1986, about the same level as 1985. Fully 64% of exports went to five nations, primarily France and Canada, and to other European nations and Japan. Since 1979 exports have ranged from $5.2-9.1 million and represented 7-14% of domestic sales.

CHECK HANDLING MACHINES

Office machines used for numbering, dating, and writing checks constituted an estimated $6.2 million overseas market during 1986, with 35% going to Canadian buyers. From 1979-83, exports volume ranged from $9.1-12.3 million, and represented between 14% and 22% of U.S. sales.

MAILING, LETTER HANDLING, MISCELLANEOUS MACHINES

These machines constituted an estimated $77 million export market

Continued.....

during 1986, up slightly over the $74.7 million of 1985. Nearly 50% of dollar volume was concentrated in three nations--England, Japan, and Canada, in 1986. Volume has been in the $65-75 million range for the past five years.

PARTS & ATTACHMENTS FOR OFFICE MACHINES

Parts and attachments for duplicators, typewriters, dictating and other machines constituted a large export market, as much as $269 million in 1985, and represented from 52-88% of domestic sales from 1980-85. In 1986 however, based on six-month activity, volume seems to have dropped off substantially to an estimated $85 million. Imports of parts heavily outweigh exports--as much as five times the dollar volume in certain years. During 1985, $984 million of such parts came into the U.S. (vs. $269 million in exports). During 1984, the balance of trade "deficit" was even higher--$626 million in imports compared to $115 million in exports. Over 44% of total parts exports were destined for England, Singapore and Canada, and eight nations together accounted for 71% of the total export market.

IMPORTS TRENDS

The United States represents a tremendous potential market for many overseas producers of office machinery, most significantly those in Japan. Marketdata estimates that **the value of imported office machines jumped sharply in 1986, rising 50% to $3.382 billion.** This is more than double the value of U.S. producers' ***exports*** of these machines, and reflects the tremendous competition posted by Japan, other Asian nations, and Europe. Imports also jumped sharply in 1982, when value rose 30.7%.

The figures on the following page reflect one major assumption--that ***imports*** of **computer printers** at least equal the value of ***exports*** of these machines. Computer printer imports have not been tracked by the Commerce Department, therefore no official statistics exist. However, Commerce stated that they do expect to start tracking these imports soon. We believe that estimating imports at the same size as exports is valid, and if anything, on the conservative side considering the presence of so many Japanese players in the market.

Below are 1986 estimates for the degree of import competition, by type machine.....

Continued.....

Type Machine	Value Of 1986 Imports
Copy machines	$1, 317.5 (Million)
Typewriters & parts	614.6
Computer Printers	460.0
Parts for office machines	381.9
Calculators	315.4
Duplicators	45.1
Addressing machines	2.2
All other machines	245.9
Total:	$3, 382.6

Japan dominates the shipment of office machines to U.S. shores more than any other nation. We estimate that $2.12 billion of the total, or 72%, could be attibuted to Japanese manufacturers during 1986. Below is a breakdown by product of how significant Japanese competition really is:

Typewriters & parts	67% of total imports value
Electronic calculators	68
Copy machines	90
Duplicators	55
Addressing machines	50
Parts & attachments (for non-calculating mach.)	41
All other machines	51

Canadian imports were valued at $120 million in 1986, West Germany--$162 million. Other developing Asian nations such as Taiwan, Korea, Hong Kong, and Singapore are beginning to appear in the import statistics, and are slowly but surely becoming more formidable competitors to Japan and traditional European trading partners of the U.S.

As a sample of office machine competition from Japan, refer to the supplier listings in the back of this report, to find the following companies: A.B. Dick, Konica, Minolta, Mita, Monroe, Panasonic, Ricoh, Sanyo, Savin, Sharp, Silver Reed, Toshiba, Canon Sony Casio, Brother, C.Itoh, Citizen, Fujitsu, Juki, Nec and Okidata.

Following are some specific machinery findings, after looking at imports from 1979-86:

Continued.....

* Imports of **dictating machines** peaked at $191 million during 1984.
* **Typewriter** imports were highest in 1979, at $614 million.
* Imports of **Parts** nearly reached $1 billion ($984 mill.) in 1985.
* Imports of **word processors** peaked at $80 million in 1984.
* **Mailing, letter handling & other** machine imports hit a high of $349 million during 1985 (vs. $150 mill. back in 1979).

Import competition is real, but there is, no doubt, a certain amount of product manufacture overseas by U.S. firms that operate manufacturing facilities in Asian and other cheaper-cost nations. In essence, products are produced there, then "re-exported" back to the U.S. for final sale. As such, they don't constitute ***real*** import competition since the products are coming from **U.S.** firms. The extent or percentage of the value of imports in this situation is not known, but Marketdata's guess is that it probably does not exceed 25% of the total.

The big story this year regarding Japanese companies is the U.S. Senate vote to punish **Toshiba Corp.** for its sale of equipment to the Soviet Union. On June 30th the U.S. Senate approved, 92 to 5, an amendment to the pending trade bill that would impose a ban of 2-5 years on imports of goods produced by Toshiba. However, many customers of Toshiba expect no harm. In fact, reports the Wall Street Journal (July 2, 1987) "...some U.S. distributors are already shunning Toshiba Products." Further, "...Toshiba's U.S. sales of consumer electronics, copying machines, computers, semiconductors and other products exceed $1 billion a year. As many as 4,000 employees of Toshiba America and related comapnies might lose their jobs." The ban was supported by both parties, with the only criticism coming from senators who felt the ban wasn't tough enough because it allows the President some discretion in limiting its scope.

THE OFFICE MACHINERY INDUSTRY
VALUE OF EXPORTS OF OFFICE MACHINES, BY TYPE MACHINE
($ MILLIONS)

	TYPEWRITERS	WORD PROCESSORS	DUPLICATORS	DICTATING MACHINES	ADDRESS. MACHINES
1979	$18.2	$83.9	$44.4	$4.3	$7.7
1980	23.7	114.5	57.7	6.2	9.1
1981	35.4	153.5	57.6	2.8	8.4
1982	29.5	128.2	45.7	1.5	7.1
1983	45.1	90.9	36.1	1.8	6.5
1984	55.5	89.4	36.6	2.5	6.1
1985	98.6	49.9	35.7*	---	5.2

	COMPUTER PRINTERS	CHECK HANDLERS	OTHER MACHY.	PARTS**
1979	$188.5	$7.7	$45.4	---
1980	296.9	10.8	59.5	$232.9
1981	334.4	12.3	61.9	215.7
1982	418.8	11.7	74.4	194.7
1983	468.3	9.1	70	201.6
1984	467	---	65.5	115.8
1985	460.9	---	74.7	269.1

* Estimated

** Parts for duplicating, dictation mach., typewriters, other machy.

SOURCE: U.S DEPT. OF COMMERCE, CURRENT INDUSTRIAL REPORTS

THE OFFICE MACHINERY INDUSTRY

U.S. PRODUCERS' EXPORTS OF COMPUTER PRINTERS

	VALUE OF EXPORTS AT PORT ($ THOUS.)	ANNUAL % CHANGE	NO. OF UNITS EXPORTED	ANNUAL % CHANGE	EXPORT AS % U.S. SALES
1978	$137,546		46,692		17
1979	188,546	37.1	71,701	53.6	17
1980	296,860	57.4	107,011	49.2	21
1981	334,447	12.7	146,733	37.1	17
1982	418,783	25.2	172,700	17.7	24
1983	468,333	11.8	243,550	41	22
1984	466,999	-0.3	268,514	10.3	18
1985	460,875	-1.3	245,728	-8.5	18
1986	427,000	-7.4	265,000	7.8	16

SOURCE: U.S. DEPT. OF COMMERCE, ANNUAL CURRENT INDUSTRIAL REPORTS, MARKETDATA CALCULATIONS, ESTIMATES

THE OFFICE MACHINERY INDUSTRY
EXPORTS & IMPORTS TRENDS — DUPLICATING MACHINES, BY TYPE

	EXPORTS OF DOMESTIC MERCHANDISE	EXPORTS AS U.S. MFRS.' SHIPMENTS	IMPORTS FOR CONSUMPTION	IMPORTS AS % APPARENT CUNSUMPTION**
SPIRIT TYPE	($ THOUS.)		($ THOUS.)	
1979	648	1	981	1
1980	781	1	926	1
1981	690	1	465	1
1982	627	1	624	1
1983	580	1	703	1
1984	449	1	486	1
1985	260	1	1,026	2
STENCIL TYPE				
1979	2,133	23	4,673	40
1980	2,307	31	4,588	47
1981	1,954	24	5,712	48
1982	1,592	17	2,493	25
1983	1,160	11	2,129	18
1984	958	NA	1,983	NA
1985	933	NA	3,136	NA
OFFSET TYPE				
1979	32,776	27*	7,217	6*
1980	43,140	54*	8,834	12*
1981	42,163	52*	13,579	21*
1982	33,077	48*	13,734	27*
1983	26,515	36*	14,766	20*
1984	25,677	24	15,520	16
1985	24,543	28	24,061	28
OTHER TYPE				
1979	8,794	*	398	*
1980	11,431	*	2,056	*
1981	12,828	*	380	*
1982	10,409	*	536	*
1983	7,839	*	573	*
1984	9,489	NA	745	NA
1985	NA	NA	NA	NA

*Offset & other combined. **Apparent consumption = imports + mfrs. sales, minus exports.

THE OFFICE MACHINERY INDUSTRY
EXPORTS & IMPORTS TRENDS (Continued)

DICTATING, TRANSCRIBING, RECORDING MACHINES

	EXPORTS OF DOMESTIC MERCHANDISE (Thous.)	EXPORTS AS % U.S. MFRS.' SHIPMENTS	IMPORTS FOR CONSUMPTION ($ Thous.)	IMPORTS AS % APPARENT CONSUMPTION**
1979	NA	NA	NA	NA
1980	$4,267	50	$68,949	93
1981	6,193	86	81,951	99
1982	2,817	24	110,551	93
1983	1,525	5	139,108	81
1984	1,788	NA	191,468	NA
1985	2,485	NA	13,433	NA

ADDRESSING MACHINES

1979	7,673	11	1,543	2
1980	9,114	13	1,726	3
1981	8,391	10	695	1
1982	7,116	9	744	1
1983	6,503	14	2,202	5
1984	6,089	9	1,832	3
1985	5,209	7	1,967	3

TYPEWRITERS (Portable & Standard)

1979	18,216	NA	614,464	NA
1980	23,701	NA	355,356	NA
1981	35,421	NA	335,965	NA
1982	29,462	NA	326,251	NA
1983	45,093	NA	338,652	NA
1984	55,473	NA	405,580	NA
1985	98,568	NA	349,385	NA

NA - DATA NOT AVAILABLE

**Apparent Consumption = Imports + Mfrs.' Sales, minus exports.

SOURCE: U.S. DEPT. OF COMMERCE

THE OFFICE MACHINERY INDUSTRY
EXPORTS & IMPORTS TRENDS (Continued)

AUTOMATIC WORD PROCESSORS

	EXPORTS AS % DOMESTIC MERCHANDISE ($ Thous.)	EXPORTS AS % U.S. MFRS.' SHIPMENTS	IMPORTS FOR CONSUMPTION ($ Thous.)	IMPORTS AS % APPARENT CONSUMPTION**
1979	$83,860	NA	$50,818	NA
1980	114,487	NA	20,862	NA
1981	153,549	11	20,593	2
1982	128,243	9	47,949	3
1983	90,937	6	72,010	5
1984	89,383	5	79,940	4
1985	49,893	3	58,253	3

CHECK HANDLING MACHINES

1979	7,679	16	1,312	3
1980	10,780	18	1,548	3
1981	12,257	22	1,653	4
1982	11,701	18	1,478	3
1983	9,067	14	1,788	3

"OTHER" OFFICE MACHINES (Inc. Mailing & Letter Handling)

1979	45,362	15	150,352	37
1980	59,518	8	NA	17
1981	61,882	9	116,444	16
1982	74,367	NA	112,768	NA
1983	70,047	NA	112,916	NA
1984	65,534	NA	142,485	NA
1985	74,745	NA	348,695	NA

PARTS FOR DUPLICATING, DICTATING MACH., TYPEWRITERS, OTHER EQUIP

1980	232,909	67+	255,283	76+
1981	215,685	79	245,438	81
1982	194,689	78	476,568	89
1983	201,598	77	513,152	89
1984	115,819	52	626,405	86
1985	269,106	88	984,383	96

THE OFFICE MACHINERY INDUSTRY

EXPORTS BY TYPE MACHINE, BY COUNTRY OF DESTINATION
1986 ESTIMATES (Based on January-June Data)
($ MILLIONS)

TYPEWRITERS & WORD PROCESSORS*		TYPEWRITER PARTS	
Total, all nations	**$67.4**	**Total, all nations**	**$128.3**
Canada	14.3	Netherlands	54.2
England	6.1	Mexico	17.9
W. Germany	6.1	Canada	11.3
Netherlands	3.1	France	10.4
Japan	2.7	W. Germany	9.3
		England	5.3

PHOTOCOPY MACHINES**		PHOTOCOPIER PARTS	
Total, all nations	**$110.2**	**Total, all nations**	**$229.2**
Canada	53	Canada	45.2
Venezuela	11.2	W. Germany	43.8
Netherlands	6.9	France	31.1
Brazil	6.3	Netherlands	30
Mexico	5.8	England	17.1
Japan	4.9	Mexico	15.5
England	4		

* Portable, non-portable, automatic

** Electrostatic, non-electrostatic, coated & plain paper type

SOURCE: U.S. DEPT OF COMMERCE, FT 410, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

EXPORTS BY TYPE MACHINE, BY COUNTRY OF DESTINATION
1986 ESTIMATES (Based on January-June Data)

($ MILLIONS)

DUPLICATING MACHINES*		DUPLICATOR PARTS	
Total, all nations	**$24.4**	**Total, all nations**	**$11.5**
Belgium	5.1	Belgium	3.1
Netherlands	4.8	Netherlands	1.6
Japan	3.5	England	1.2
Canada	2.7	Japan	0.8
		Canada	0.8

CALCULATORS**		NUMBER, DATE, CHECK WRITING MACHINES	
Total, all nations	**$19.0**	**Total, all nations**	**$6.2**
Venezuela	3.7	Canada	2.2
Japan	2.8	England	0.7
Canada	2.1	Japan	0.6

PENCIL SHARPENERS		ADDRESSING MACHINES	
Total, all nations	**$1.0**	**Total, all nations**	**$5.3**
Mexico	0.2	France	1.2
Canada	0.2	Canada	1
		Japan	0.4
		W. Germany	0.4
		England	0.4

* Stencil, spirit, offset & other types

** Electronic--hand held, non-hand held

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

EXPORTS BY TYPE MACHINE, BY COUNTRY OF DESTINATION
1986 ESTIMATES (Based on January-June Data)

($ MILLIONS)

	ALL OTHER, 'MISCELLANEOUS' OFFICE MACHINES
Total, all nations	**$77.2**
England	14
Japan	12.1
Canada	11.4
Netherlands	7.6
France	2.6
W. Germany	2.5
Brazil	2.3

	PARTS FOR MISCELLANEOUS OFFICE MACHINES
Total, all nations	**$64.9**
England	14.2
Singapore	12.5
Canada	10.8
Mexico	7.9
W. Germany	5.8
Italy	3.4
Japan	3.2
Korean Rep.	3

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY
VALUE OF IMPORTS, BY TYPE MACHINE
($ MILLIONS)

	DUPLICATING MACHINES	DICTATING MACHINES	ADDRESSING MACHINES	TYPEWRITERS (Portable and Standard)
1979	$13.3	—	$1.5	$614.5
1980	16.4	$69.9	1.7	355.4
1981	20.1	81.9	0.7	336
1982	17.4	110.6	0.7	326.3
1983	18.2	139.1	2.2	338.7
1984	18.7	191.5	1.8	405.6
1985	28.2	13.4	2	349.4
1986 Est.	45.1	NA	2.2	476.9

	AUTOMATIC WORD PROCESSORS	CHECK HANDLING MACHINES	MAILING, LETTER-HANDLING & OTHER MACH.	PARTS*
1979	$50.8	$1.3	$150.4	—
1980	20.9	1.5	NA	$255.3
1981	20.6	1.7	116.4	245.4
1982	47.9	1.5	112.8	476.6
1983	72	1.8	112.9	513.2
1984	79.9	—	142.5	626.4
1985	58.3	—	348.7	984.4

* Parts for duplicating, dictating machines, typewriters, other machines.

NA - Data not available

SOURCE: U.S. DEPT. OF COMMERCE, FT 135-IMPORTS FOR CONSUMPT.
MARKETDATA ESTIMATES, BASED ON JAN.-JUNE DATA

THE OFFICE MACHINERY INDUSTRY

U.S. IMPORTS FOR CONSUMPTION, BY TYPE MACHINE
BY COUNTRY OF ORIGIN
1986 ESTIMATES (Based on January-June Data)
($ MILLIONS)

TYPEWRITERS (All Types) AND PARTS		ELECTRONIC CALCULATORS	
Total, all nations:	**$614.6**	**Total, all nations:**	**$315.4**
Japan	411.2	Japan	213.7
W. Germany	117.3	China (Taiwan)	46.9
Italy	21.2	Korean Republic	20.3
Singapore	20.4	Hong Kong	19.1
China (Taiwan)	10.9		

DUPLICATING MACHINES & PARTS		PHOTOCOPY MACHINES*	
Total, all nations:	**$45.1**	**Total, all nations:**	**1,317.5**
Japan	24.9	Japan	1,191.0
England	7.6	Netherlands	90.5
W. Germany	5.7	Hong Kong	17.6
Belgium	2.1	W. Germany	7.8

* Incl. microfilm & microfiche reader/printer combinations

SOURCE: U.S. DEPT. OF COMMERCE, FT 135-IMPORTS FOR CONSUMPTION, MARKETDATA ESTIMATES

U.S. IMPORTS FOR CONSUMPTION, BY TYPE MACHINE (Cont'd.)
BY COUNTRY OF ORIGIN
1986 ESTIMATES (Based on January-June Data)
($ MILLIONS)

	ADDRESSING MACHINES		ALL OTHER OFFICE MACHINES
Total, all nations:	**$2.2**	**Total, all nations**	**$245.9**
Japan	1.1	Japan	124.4
Finland	0.3	Canada	31.2
England	0.2	W. Germany	24
		England	13.7
		China (Taiwan)	13.2
		Denmark	6.6

	PARTS FOR ALL OTHER NON-CALCULATING MACHINES
Total, all nations:	**$381.9**
Japan	155.2
Canada	89
England	27.4
Mexico	24.7
Netherlands	18.2
China (Taiwan)	13.9
Korean Republic	10.8
W. Germany	7.3

SOURCE: U.S. DEPT. OF COMMERCE, FT 135-IMPORTS FOR CONSUMPTION, MARKETDATA ESTIMATES

THE OFFICE MACHINERY INDUSTRY

TRENDS IN PRODUCER PRICES

Office machinery prices have not been tracked on a ***historical*** basis by the **Bureau of Labor Statistics**, prior to June of 1985, for most product lines. Insufficient samples or information was available to construct meaningful price movements. **The exception** is in the area of **Duplicating Machines and Time Recorders**, where indexes go back to 1976. This historical data appears in this section, along with ***monthly*** indexes for 1986 and early 1987--the bulk of the price information available.

Office Machinery Overall, as tracked by the Bureau of Labor Statistics on a monthly basis, rose by only 1.0% from March 1986 to March 1987. Of the seven types of machines tracked regularly by the BLS, producer prices rose most rapidly for **Check Handling** Machines (dating, numbering, endorsing machy.). Prices of these machines were up 9.8% for the year. **Forms Handling Equipment** (bursters, decollators, imprinters) prices increased by 5.5%, followed by **Pencil Sharpeners, Rebuilt and Miscellaneous** Machines at 4.4%.

Mailing Machinery (sorting, tying, cancelling, postage meters) prices were up only 0.2%, and **Time Recording/Stamping** Machine prices rose 0.3%. Prices actually ***fell*** by 3.7% for **Addressing Machines** (labelers, plate embossers, addresser-imprinters), and by 0.7% for **Typewriters and Word Processors.**

Perhaps as a reflection of the competitive nature of the market, **Photocopier** prices rose only 0.2% during 1986, and have moved very little through February of 1987. **Duplicating Machine** prices rose only about 1.3% in 1986. Double-digit price increases were common in the inflationary period of 1979-81. **Time Recording Machine** prices actually ***fell*** 15% during 1984, after four years of double-digit increases.

To provide a "snapshot" of **dealer retail price tags** for a variety of machines, Marketdata extracted price information from the May 1987 issue of Business Electronics Dealer magazine. Their "Street Prices" section regularly quotes prices charged for various machines--advertised retail or quoted prices, in this case for the period March 15-April 13th. Following is a summary of these prices, by brand, with calculated ranges and "average prices".....

Continued.....

TYPEWRITERS **Sample of prices by different dealers**

BROTHER EM-411	$395, 369
CANON AP 500	729
IBM SELECTRIC III	699, 795, 829, 895
OLIVETTI CX-880	348
OLYMPIA COMPACTS	338
SHARP 2X-420	799
SMITH CORONA XE-5100	299, 199, 198, 188
SMITH CORONA 6500	459, 309, 338
TOWA SCRIPTOR ELECTRIC	139

PRICE RANGE; $139-895 **AVG. PRICE: $462**

PHOTOCOPIERS-LOW END & PERSONAL TYPES

CANON PC-5	$509, 595
CANON PC-25	779
PLUS USA "COPY JACK"	175
RICOH JR. COPIER	599
RICOH 2050	1,395
SHARP Z-50 PERSONAL	589
SHARP 250	585
SHARP 7100	999
TOSHIBA BD 4121	1,987

PRICE RANGE: $175-1,987 **AVG. PRICE: $821**

FACSIMILIE MACHINES

AT & T 3510	$1,989
KONICA KONIMAIL 200	2,595
KONICA KONIMAIL 40	3,695
OMNIFAX G-10	2,388
SANYO 515	1,895
SANYO 725	3,050
SHARP FO-200 FAXPHONE	1,395

PRICE RANGE: $1,395-3,695 **AVG. PRICE: $2,429**

Continued.....

ANSWERING MACHINES

PHONE-MATE 8000	$107, 119
SANYO TAS 255	82

PRICE RANGE: $82-119 **AVG. PRICE: $102**

SHREDDERS

POWERSHRED 210	$715
POWERSHRED 310	1,195

COMPUTER PRINTERS

LOW END

EPSON FX-286E	$519, 505, 499, 560, 569
OKIDATA 192 PLUS	319, 365
PANASONIC 1080I	199, 199, 229, 229, 229, 249, 279

PRICE RANGE: $199-560 **AVG. PRICE: $353**

LASER PRINTERS

EPSON GQ-3500	$1,995
HEWLETT-PACKARD LASERJET SERIES III	1,699, 1695, 1,995, 1,999
OKIDATA LASERLINE 6	1,795, 1,995

PRICE RANGE: $1,695-1,999 **AVG. PRICE: $1,624**

Obviously, these prices are not intended to be all-inclusive, but merely a rough view of what retail dealers are charging around the nation for the more popular models of selected types of office machines.

PRODUCER PRICE INDEXES FOR OFFICE MACHINES, BY TYPE
(Continued)
HISTORICAL PRICE TRENDS FOR DUPLICATING MACHINES AND TIME RECORDERS
1976-1986 (June 1985 = Index Base of 100)

	DUPLICATING MACHINES INDEX (Annual Avg.)	ANNUAL % CHANGE	TIME RECORDERS INDEX (Annual Avg.)	ANNUAL % CHANGE
1976	55.4		67	
1977	59	6.5	69.5	3.7
1978	62.3	5.6	73	5
1979	68.8	10.4	75.8	3.8
1980	80	16.3	84.7	11.7
1981	88.3	10.4	95.7	13
1982	94.8	7.4	112.8	17.9
1983	97	2.3	124.9	10.7
1984	96.6	-0.4	105.2	-15.8
1985	NA	---	99.9	-5
1986	101.5	2.5*	103.5	3.6

NA - DATA NOT AVAILABLE
*** AVERAGE ANNUAL RATE FOR 1984-86**

SOURCE: BUREAU OF LABOR STATISTICS, PRODUCER PRICE INDEXES
MARKETDATA CALCULATIONS

PRODUCER PRICE INDEXES FOR OFFICE MACHINES, BY TYPE
1986/87 - MONTHLY TRENDS
(JUNE 1985 = INDEX BASE OF 100)

1986/87 MONTH	ALL OFFICE MACHINES, OVERALL MARKET	FORMS HANDING EQUIP. (Bursters, Decollators, Imprinters)	Mailing Machy. (Sorting, Tying, Cancelling, Postage Meters)	Std. Typewriter & Word Procss. Machines
January	100.4	100	99.3	100
February	101.4	100	102.4	100.8
March	100.8	100	102.4	100
April	101	100	99.2	100
May	100.6	100	99.3	100
June	100.8	100	99.3	100
July	100.9	100	97.2	100
August	101.2	100	97.8	100
September	100.7	100	99.3	97.8
October	102.1	105.2	99.3	98.9
November	101.9	105.2	NA	98.9
December	101.7	105.2	102.6	98.9
% Chg. 12/85 12/86	1.5	5.2	3.5	-1.1
1987				
January	102.8	105.2	105.9	99.3
February	102.4	105.5	105.9	99.3
March	101.8	105.5	102.6	99.3

NA - Data Not Available
SOURCE: BUREAU OF LABOR STATISTICS, PRODUCER PRICE INDEXES.

PRODUCER PRICE INDEXES FOR OFFICE MACHINES, BY TYPE (CONTINUED)

1986/1987 - MONTHLY TRENDS

(June 1985 = Index Base of 100)

1986 MONTH	ADDRESSING MACHY. (Labeling, Plate Embossers, Addresser-Imprinters)	CHECK HANDLING MACH. (Dating, Endorsing, Numbering, etc.)	TIME RECORDING, TIME STAMP MACHINES	PENCIL SHARPENERS, REBUILT & OTHER MACHINES
January	93.9	101.6	100.2	100.6
February	NA	101.6	102.7	100.6
March	94.1	101.6	103.7	100.6
April	94	109	104	101
May	94	NA	104	101
June	94	109	104	101
July	94	109	104	101
August	94	109	104	101.7
September	97.3	NA	104	101.2
October	97.3	108.7	104	101.2
November	97.3	NA	104	101.2
December	NA	109.1	104	101.2
% Chg. 12/85 12/86	—	7.4	3.8	0.6
1987				
January	97.3	111.9	104	104.2
February	NA	111.6	104	104
March	90.6	111.6	104	105

SOURCE: BUREAU OF LABOR STATISTICS, PRODUCER PRICE INDEXES

PRODUCER PRICE TRENDS FOR OFFICE MACHINERY, BY TYPE
(Continued)
1986/87 - MONTHLY TRENDS FOR PHOTOCOPIERS

(June 1985 = Index Base of 100)

1986/87 MONTH	PHOTOCOPYING EQUIPMENT INDEX
January	94.8
February	94.2
March	94.2
April	94.2
May	94.2
June	94
July	94.5
August	94.5
September	94.7
October	95
November	95
December	95
% Chg. 1/86-12/86	0.2
1987	
January	94.7
February	95.3

SOURCE: BUREAU OF LABOR STATISTICS, PRODUCER PRICE INDEXES

THE OFFICE MACHINERY INDUSTRY

DISTRIBUTION CHANNEL ANALYSIS

Office machinery is marketed through a variety of channels, including direct sale to end-users and OEMs by the manufacturer's regional sales offices or main headquarters, by dealer/distributors, and in the case of computer printers--via VARs (value added resellers), franchised computer store chains, retailers, and systems suppliers.

The Census Bureau performs a **"Census of Wholesale Trade"** every five years, the last one being 1982. Three types of wholesalers are defined:

* **Merchant Wholesalers**
* **Manufacturers' Sales Branches & Offices**
* **Agents, Brokers, Commission Merchants** (do not take physical possession of goods and do not maintain a warehouse/inventory)

Office machines are not tracked alone, but are combined in a classification including: office machines, hotel & restaurant equipment, store machines and supplies. By 1982, the Census Bureau reported that there were **20,014** such "establishments" in operation nationwide, which produced **sales totaling $64.5 billion.**

Over 75% of these establishments were merchant wholesalers, with 19% of the locations being manufacturers' sales branches. But, most of the **sales** volume is done by the company sales branches--63% of the $64.5 billion. Overall, sales of this commercial machinery sold by wholesalers grew at a 27% average annual rate from 1977-82. Growth by merchants, however, was over 32% annually, while manufacturers' sales branches sales grew 25% yearly.

California accounted for 13.4% of all establishments with 2,672, and 14.7% of total sales, worth $9.5 billion. Texas and New York followed, with 1,580 and 1,459 establishments, respectively. Florida was the only other state with over 1,000 such wholesale locations (1,069). New York wholesalers of "commercial machinery" had sales of $5.37 billion in 1982,

Continued.....

and Texas generated $5.03 billion in volume. Many of the other states in the top 15 are located in the Northeast, although there are some in the South. As a group, the top 15 states accounted for 67.% of such wholesales locations and 76% of the sales.

Most business equipment dealers seem to specialize in carrying one or a few realted product lines. Usually, you will see an office machinery distributor selling: typewriters/word processors/calculators or copiers/duplicators/facsimile machines. It is rare to see a dealer carry a "full line" of office machinery encompassing: typewriters, copiers, FAX, duplicators, mail/forms handling equipment, addressing machines, time recorders, etc. There are distinctly different technologies involved and specialized product knowledge in one or two product areas is more logical.

Computer Printers is an important product line today, and some good distributor information is available, by company, from The 1987 Printout Annual, from Datek Information Sefvies, CAP International. Distribution channels for these products may differ somewhat from other office machines, and it warrants a separate examination. Following is a summary of these distribution strategies.....

Brother International Corp.....markets its printers to OEMs, VARs, and retailers. In 1985 Brother signed a distribution agreement with MicroAge Computer Stores, America's third largest franchised computer store chain.

Citizen America Corp.....sells to dealers, distributors, and OEMs. Citizen was formed in 1984 by its parent, Citizen Watch Co., Ltd. of Japan, establishing itself as a significant supplier to the U.S. printer market.

Dataproducts Corp.....sells primarily through OEMs, although distributors account for a growing percentage of sales.

***Continued*.....**

Datasouth Computer Corp......The majority of sales are through a network of distributors in the U.S. and 27 foreign countries. Overseas sales account for roughly 24% of company income.

Diconix, Inc......sells directly to end-users such as state lottery commissions and to high-volume direct mailers such as Sears. The Dijit 1 is sold through TechNet distributors.

Fujitsu America......printers are marketed under both the Fujitsu label and through OEMs.

Genicom Corp......printers are sold through the firm's own salesforce, as well as through distributors and GE's old sales and service organization, GEISCO. In addition, Genicom has a very successful OEM and dealer/distributor program.

Hewlett-Packard Corp......has a strong distribution arm, and is well positioned to move products through virtually every available channel. The company has strong OEM, VAD/VAR, and retail programs. In addition, HP printers are sold directly to end-users as part of HP control and instrumentation systems and general purpose computer systems.

Hitachi, Ltd......The firm's Computer Sales & Service Division markets computer printers exclusively to OEMs through a direct sales force.

Honeywell Information Systems.....has a new Private Label program under which it provides its larger printer contracts, such as Xerox, with all necessary documentation, graphics, logos and colors. HISI now has its own U.S. sales force, and the firm operates a North American sales operation based in San Francisco.

IBM.....sells and leases equipment through its direct sales force, through retail stores, dealers, and distributors, as well as a strong VAR program.

Continued......

Mannesmann Tally Corp.....In the Northwest U.S. it sells directly to dealers. Outside that area Tally sells its products to dealers by way of regional distributors. The company also continues its traditional concentration of OEM and VAR sales.

Minolta Corp.....The entire printing line is marketed to OEM customers, and Minolta recently established an operation in Torrance, CA which is marketing the SP50B to distributors.

NEC Information Systems.....The recently introduced P6 and P7 will be distributed through major computer retail chains. Distribution channels for these printers will include so-called "second tier" distributors such as MicroAmerica which supplies retailers, systems integrators, and VAD/VARs. NEC has traditionally been strong in the dealer/distributor marketplace, perhaps becasue Diablo and Qume dominted the OEM channel in the early days of the business.

Okidata Corp.....has distribution centers in major cities throughout the U.S. to serve dealers, computer retailers, OEMs, and mass merchandisers.

Printronix, Inc.....Its traditional channel is OEM sales, and its present remarketers include: DEC, Prine, TI, Basic Four, and Tandy/Radio Shack.

Qume Corp.....claims to be the world's largest manufacturer and supplier of high-speed daisywheel printers to the OEM marketplace, a marketing channel which constitutes a majority of Qume's sales.

RICOH Corp.....sells most of its products via OEM channels, although it is also pursuing distributors.

Silver Reed America, Inc.....began by selling its printers to OEMs but retailers now account for a large percentage of company sales. Printers and typewriters are targeted at both consumers and small businesses.

Continued.....

Star Micronics, Inc......maintains regional sales offices in Los Angeles, Boston, Chicago, and Piscataway, NJ. The company sells to OEMs as well as to dealers for consumer markets.

Texas Instruments.....sells impact serial matrix, laser, and thermal printers to systems suppliers, dealers, distributors, OEMs, and end-users.

Xerox-Printing Systems Division.....Diablo sells printers through direct sale, dealers, and distributors, but considers the OEM market its prime target. The company has a recent agreement with Brother to produce typewriters of Brother's design at Xerox's Fremont plant to be sold by both companies under their own labels.

THE OFFICE MACHINERY INDUSTRY

DISTRIBUTION CHANNEL ANALYSIS
"COMMERCIAL MACHINERY & EQUIPMENT"*
NUMBER & SALES OF WHOLESALERS, BY TYPE WHOLESALER

	NO. OF ESTABLISH.		SALES ($ Billions)		
					% CHANGE
TYPE WHOLESALER	1977	1982	1977	1982	1977-82
TOTAL, ALL TYPES:	14,137	20,014	$27.39	$64.49	135.5
MERCHANT WHOLESALERS	10,699	15,158	8.14	21.17	160.3
MFRS. SALES BRANCHES & SALES OFFICES	2,669	3,850	18.01	40.82	126.7
AGENTS, BROKERS, COMMISSION MERCHANTS	769	1,006	1.24	2.49	101

	% OF TOTAL ESTABS.		% OF TOTAL SALES	
	1977	1982	1977	1982
MERCHANT WHOLESALERS	75.7	75.7	29.7	32.8
MFRS. SALES BRANCHES & SALES OFFICES	18.9	19.2	65.8	63.3
AGENTS, BROKERS, COMMISSION MERCHANTS	5.4	5	4.5	3.9

* INCLUDES: Office Machinery, Hotel & Restaurant Equip., Store Machy. & Supplies

SOURCE: 1982 CENSUS OF WHOLESALE TRADE,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

DISTRIBUTION CHANNEL ANALYSIS
TOP 15 STATES IN NUMBER & SALES OF "COMMERCIAL MACHINERY"*
SOLD BY ALL WHOLESALERS - 1982

RANKED BY NO. OF ESTABLISHMENTS			RANKED BY SALES		
STATE	NUMBER	% OF TOTAL	STATE	SALES ($ Billions)	% OF TOTAL
TOTAL U.S.	20,014	100	TOTAL U.S.	$64.45	100
California	2,672	13.4	California	9.49	14.7
Texas	1,580	7.9	New York	5.37	8.3
New York	1,459	7.3	Texas	5.03	7.8
Florida	1,069	5.3	Illinois	4.83	7.5
Illinois	947	4.7	New Jersey	3.5	5.4
Pennsylvania	829	4.1	Massachusetts	3.07	4.8
Ohio	799	4	Pennsylvania	2.73	4.2
New Jersey	708	3.5	Florida	2.66	4.1
Michigan	669	3.3	Ohio	2.42	3.8
Massachusetts	558	2.8	Michigan	2.26	3.5
Georigia	542	2.7	Minnesota	2.15	3.3
Minnesota	444	2.2	Georgia	1.52	2.3
Virginia	443	2.2	Virginia	1.38	2.1
No. Carolina	419	2.1	Missouri	1.36	2.1
Missouri	410	2	Maryland	1.34	2.1
TOTAL:	13,548	67.5		$49.11	76.2

* Includes: Office Machinery, Hotel & Restaurant Equip., Store Machy. & Supplies

SOURCE: 1982 CENSUS OF WHOLESALE TRADE,
MARKETDATA CALCULATIONS

ECONOMIC STRUCTURE OF THE OFFICE MACHINERY INDUSTRY

OVERVIEW

The U.S. Census Bureau conducts a comprehensive survey of all manufacturers every five years (years ending with a 2 and 7), based on the Government **SIC (Standard Industrial Classification) System.** This is called the quinnenial **Census of Manufactures**, and was last performed in 1982. Similar Censuses are performed for Retail, Wholesale, and Service sectors of the economy. The next Census will be conducted in 1987, but due to the vast amount of information collected it will probably not be published and made available until 1989.

For in-between years such as 1983, 1984, 1985, etc. a somewhat smaller number of key statistics are collected via the Commerce Department's **Annual Survey of Manufactures**. Census and Annual Survey data are provided in this section, the bulk of it coming from the 1982 Census. The office machinery industry's SIC code (which facilitates the collection and analysis of production plant operating statistics) happens to be: **3579.** This encompasses plants that produce office machines and typewriters ***other*** than computers, scales & balances, calculating and accounting machines. The most recent year for which production plant statistics are available for the industry is 1985.

The information collected via the Census and Annual Surveys is invaluable in analyzing short and long-term industry trends, and providing operating "yardsticks" by which individual companies can compare themselves. The data is free and in the "public domain". It should be an essential ingredient to any company's market potential, forecasting, and planning process.

SUMMARY OF GENERAL INDUSTRY STRUCTURE

As of 1982, the industry was comprised of 204 companies that operated 232 manufacturing plants nationwide. This compares to 195 firms operating 215 plants in 1977. These plants employed 38, 800 workers and had factory shipments of products worth $5.383 billion. Peak employment levels were reached during 1980, when 50, 500 workers were employed. Sales have been on an uptrend for the past decade, and rose a strong 21% in 1985.

Continued.....

The industry's plants are predominantly small facilities, as fully 56% employed less than 50 workers in 1982. Plants of the 500+ worker size accounted for 56% of the value of shipments, while accounting for only 17 of the total of 232 plants. The cost of **materials** by 1985 was $2.347 billion, and **payroll** costs amounted to another $1.091 billion. Historically, combined payroll and materials costs (total operating costs) have ranged from 60-65% of sales, but this percentage has dropped substantially in recent years.

New capital investment by office machinery producers reached $256.6 million in 1985, the second highest level since the peak $281 million spent in 1984. The **"gross book value of all fixed assets"** rose 13% to $1.694 billion during 1985. **Inventories** carried by industry plants were up 11% to $1.227 bilion. In 1982, the average shipments per plant amounted to $18.35 million

By plant size, the following findings are revealed.....

* Plants employing 500-999 workers had the lowest operating costs (payroll & mtls.) at 49.9% of sales, while those with 50-99 had the highest at 73%.

* Payroll per employee was highest at $24, 520 for plants with 1000 or more, and lowest at $15,666 for those employing 10-19. Sales per employee ranged from $55,333 to $227,510 for plants employing 10-19 and 500-999, respectively.

* Plants of the 100-500 worker size carried the greatest inventory levels, with an inventory/shipments ratio of 3.83-3.95, versus 1.91-3.28 for other sized plants.

* Plants employing 250-99 workers had the largest capital investment, 5.82% of sales and 9.54% of value added by manufacture.

THE OFFICE MACHINERY INDUSTRY

GENERAL INDUSTRY STATISTICS FOR MANUFACTURING PLANTS

	NUMBER OF PLANTS	NUMBER OF COMPANIES	NUMBER OF EMPLOYEES (Thous.)	VALUE OF INDUSTRY SHIPMENTS ($ Mill.)	AVG. SHIPMTS. PER PLANT ($ Mill.)
1972	97	206	34.5	$1296.2	$13.36
1973	—	—	35.7	1,582.0	—
1974	—	—	38.1	1,874.3	—
1975	—	—	35.4	1,791.4	—
1976	—	—	36.7	2,006.3	—
1977	215	195	42.4	2,719.7	12.64
1978	—	—	46.1	3,002.8	—
1979	—	—	47.1	3,356.7	—
1980	—	—	50.5	3,803.9	—
1981	—	—	44.6	3,955.5	—
1982	232	204	43.7	4,256.7	18.35
1983	—	—	NA	NA	—
1984	—	—	38.7	4,449.5	—
1985	—	—	38.8	5,383.5	—

NA - DATA NOT AVAILABLE

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

GENERAL INDUSTRY STATISTICS FOR MANUFACTURING PLANTS (Continued)

	MATERIALS COSTS	PAYROLL COSTS	NEW CAPITAL INVEST.	GROSS BOOK VALUE OF FIXED ASSETS	VALUE OF YEAR-END INVENTORIES
			($MILLIONS)		
1972	$414.6	$342.5	$49.6	$466.4	$245.4
1973	549.6	394.5	45.1	588.2	318.3
1974	650.1	448	46.4	517.9	430.4
1975	609.2	440.5	59	560.2	432.6
1976	664.6	495.6	70.1	628.9	433.2
1977	1,077.1	638.8	111.5	NA	575.3
1978	1,185.9	732.6	193.8	947	696.8
1979	1,339.3	834.4	177.7	1,083.6	858.3
1980	1,587.6	989.9	221.4	1,220.7	1,054.3
1981	1,509.8	877.2	149.3	1,140.2	957.7
1982	1,572.7	963.7	198.5	1,325.1	1,089.1
1983	1,691.9	1,060.0	206.7	NA	1,035.6
1984	2,193.7	1,037.7	281	1,499.5	1,104.2
1985	2,347.5	1,091.9	256.6	1,694.5	1,226.8

NA - DATA NOT AVAILABLE

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

MISCELLANEOUS OFFICE MACHINERY MANUFACTURING PLANT ANALYSIS-NUMBER OF PLANTS & WORKERS BY PLANT SIZE (1984 VS. 1980)

(1984)

PLANT SIZE:	NUMBER OF FACILITIES	PERCENT OF TOTAL	NUMBER OF EMPLOYEES	PERCENT OF TOTAL
TOTAL U.S.	217	100	41,226	100
1-4 EMPLOYEES	47	21.7	89	0.2
5-9	19	8.7	122	0.3
10-19	29	13.4	404	1
20-49	30	13.8	951	2.3
50-99	26	12	1,894	4.6
100-249	30	13.8	4,944	12
250-499	20	9.2	7,164	17.4
500-999	8	3.7	5,428	13.2
1000 OR MORE	8	3.7	20,230	49.1
		1980		
TOTAL U.S.	173	100	30,182	100
1-4	35	20.2	67	0.2
5-9	20	11.6	138	0.5
10-19	19	11	270	0.9
20-49	23	13.3	710	2.4
50-99	14	8.1	989	3.3
100-249	30	17.3	4,575	15.2
250-499	19	11	7,087	23.5
500-999	8	4.6	5,443	18
1000 OR MORE	5	2.9	10,903	36.1

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

OPERATING COSTS ANALYSIS
LABOR & MATERIALS COSTS, LABOR PRODUCTIVITY

Combined payroll and materials costs for the office machinery industry ate up 64% of each sales dollar during 1985, with 44 % of the total attributable to materials. Materials costs soared in 1984, to 49% of sales, causing operating costs to account for 73% of shipments. But historically, operating costs have represented about 60% of sales.

For the industry's 38,800 employees in 1985, producers faced a payroll bill of $1.092 billion, up a moderate 5.2% over the prior year. Payroll costs topped $1 billion for the first time in 1983. Payroll costs rose at a 6.1% average annual pace for the four years from 1981-85. Payroll per employee reached $28,141 in 1985, while assets per employee hit $43,672 and value added per employee rose 31% to $81,131.

Generally, **Production Workers** represent 60-65% of the industry's total number of workers, but this share has dropped significantly in recent years. Their average hourly pay stood at $10.44 by 1985, only a 1.7% increase from 1984. The big jump in wages occurred in 1983, when hourly earnings soared 22.5%.

Labor productivity can be measured by comparing the value added by manufacture to the average hourly wages paid to produce that value--or the **"Value Added/Wage Ratio"**. Due to excellent growth in value added, this ratio has climbed to new heights, reaching an all-time peak of 9.51 in 1985.

The industry's **Total Compenation** bill (which includes costs *other* than payroll) rose to $1.298 billion by 1985. Salaries and wages accounted for 84% of this tab--historically this share runs at about 82%. Social Security and other legally required payments continued rising, to 6.7% of the total. Employer Benefits since 1982 have been cut, falling to 9.2% of total compensation in 1985.

Total **Materials Costs** in 1985 were $2.347 billion. Detailed breakdowns of the types of materials consumed in the production of office machines, however, is only available via the Census of Manufactures. In 1982, of total materials costs of $1.572 billion, much of the costs were "buried" in a catch-all category named "all other materials, parts, containers, not elsewhere specified". But, some specific data does exist for certain materials and components.

Continued.....

For instance, steel, aluminum, and copper mill shapes and forms, and metal stampings appear to have accounted for over $160 million. And, electronic components such as semiconductors, capacitors, resistors, transformers, etc. accounted for another $94 million. Motors, generators, and electrical transmission, distribution and control devices accounted for $101 million.

THE OFFICE MACHINERY INDUSTRY

LABOR TRENDS - GENERAL STATISTICS

	NUMBER OF EMPLOYEES (Thous.)	INDUSTRY PAYROLL ($ Mill.)	PAYROLL PER EMPLOYE (Dollars)	ASSETS PER EMPLOYE (Dollars)	VALUE ADDED PER EMPLOYEE (Dollars)
1967			$7,015		$13,846
1972	34.5	$342.5	8,851	$13,518	19,358
1973	35.7	394.5	9,706	16,476	24,735
1974	38.1	448	10,178	13,593	25,452
1975	35.4	440.5	10,764	15,824	28,250
1976	36.7	495.6	11,757	17,136	32,851
1977	42.4	638.8	11,901	NA	30,268
1978	46.1	732.6	13,027	20,542	36,658
1979	47.1	834.4	13,705	23,006	40,872
1980	50.5	989.9	15,264	24,172	46,861
1981	44.6	877.2	16,606	25,565	41,758
1982	43.7	963.7	18,309	30,322	39,765
1983	45.9	1,060.0	23,093	NA	57,551
1984	38.7	1,037.7	26,814	38,746	61,563
1985	38.8	1,091.9	28,141	43,672	81,131

NA - DATA NOT AVAILABLE

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY
LABOR TRENDS (Continued)
PRODUCTION WORKER STATISTICS

	PRODUCTION WORKERS AS % TOTAL EMPLOYMENT	AVERAGE HOURLY EARNINGS (Dollars)	ANNUAL PERCENT CHANGE	VALUE ADDED PER PRODUCTION WORKER MAN-HOUR (Dollars)	ANNUAL PERCENT CHANGE
1967	66	$2.82		$10.59	
1972	61	3.78	6.8*	15.08	8.5*
1973	63	4.12	9	18.28	21.2
1974	64	4.57	10.9	19.35	5.9
1975	61	4.84	5.9	23.65	22.2
1976	64	4.84	—	26.42	11.7
1977	66	5.15	6.4	23.62	-10.6
1978	67	5.41	5	27.31	15.6
1979	65	5.9	9.1	30.36	11.2
1980	64	6.77	14.7	35.89	18.2
1981	62	7.24	6.9	32.81	-8.6
1982	60	7.73	6.8	34.23	4.3
1983	53	9.47	22.5	56.56	65.2
1984	44	10.27	8.4	69.66	23.2
1985	43	10.44	1.7	99.3	42.5

* Average annual percent change over period.

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY
OPERATING COSTS ANALYSIS

AS A PERCENT OF VALUE OF SHIPMENTS:

	MATERIAL COSTS	TOTAL OPERATING COSTS (Payroll & Materials)
1967	31	59
1972	32	58
1973	35	60
1974	35	59
1975	34	59
1976	33	58
1977	40	63
1978	39	64
1979	40	65
1980	42	68
1981	38	60
1982	37	60
1983	39	63
1984	49	73
1985	44	64

NA - DATA NOT AVAILABLE

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

LABOR COSTS BY TYPE

	TOTAL COMPENSATION ($ Mill.)	PERCENT FOR: SALARIES & WAGES	SOCIAL SECURITY & OTHER LEGALLY REQUIRED PAYMTS.	EMPLOYER BENEFITS PROGRAMS
1975	$518.1	85	5	9.9
1976	591.1	83.8	5.3	10.9
1977	NA	---	---	---
1978	884.6	82.8	6	11.2
1979	1,008.2	82.8	6.2	11
1980	1,209.4	81.8	6.3	11.9
1981	1,071.2	81.9	6.6	11.5
1982	1,181.0	81.6	6.6	11.8
1983	1,282.6	82.6	6.2	11.2
1984	1,236.0	83.9	6.4	9.7
1985	1,298.3	84.1	6.7	9.2

NA - DATA NOT AVAILABLE

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

LABOR PRODUCTIVITY RATIOS
FOR PRODUCTION WORKERS

	VALUE ADDED PER PRODUCTION WORKER MAN-HOUR	AVERAGE HOURLY WAGES	VALUE ADDED/ WAGE RATIO
1967	$10.59	$2.82	3.75
1972	15.08	3.78	3.98
1973	18.28	4.12	4.44
1974	19.35	4.57	4.23
1975	23.65	4.84	4.89
1976	26.42	4.84	5.46
1977	23.62	5.15	4.59
1978	27.31	5.41	5.05
1979	30.36	5.9	5.15
1980	35.89	6.77	5.3
1981	32.81	7.24	4.53
1982	34.23	7.73	4.43
1983	56.56	9.47	5.97
1984	69.66	10.27	6.78
1985	99.3	10.44	9.51

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

INDUSTRY MANUFACTURING PLANTS' CONSUMPTION OF MATERIALS BY KIND

RANKED BY COST	DELIVERED COST OF MATERIALS ($ MILLIONS)
Total Cost of Materials, Parts, Containers And Supplies	$1,257.7
Parts for electronic computing equip.	183.2
Electrical transmission, distribution, & control equipment	59.1
Stell mill shapes & forms	58.7
Semiconductors	58.4
Electric motors & generators	41.9+
Fabricated plastic products	39
Resistors, capacitors, transformers, other electronic components (exc. semicond.)	36
Metal stampings	26.3
Sheet metal products	26.1
Castings (iron, steel, alum., copper, etc.)	24.1+
Paper & paperboard products	22
Aluminum mill shapes	16.9
Wiring devices, switches, outlets	16.1
Bolts, nuts, screw mach. products	11
Electron tubes	10.8
Copper mill shapes & forms	8.4
Ball & roller bearings	7.7
Fabricated rubber products	5.8
All other materials, parts, containers & supplies, not elsewhere specified	606.2

SOURCE: 1982 CENSUS OF MANUFACTURES

INVENTORY AND CAPITAL INVESTMENT TRENDS

The value of year-end **Inventories** carried by office machinery manufacturers rose 11% to $1.22 billion during 1985, and inventory value has topped the $1 billion mark since 1982. Historically, over the 10-year period from 1975-85, the **Inventory/Shipments Ratio** (year-end inventory value divided by avg. monthly sales) has averaged 2.88. This ratio stood at 2.73 as of 1985, down from the prior year--a good sign that producers are running "leaner".

An inventory build-up took place from 1977-1980, culminating in the highest inventory/shipments ratio posted by the industry--3.33. This peak level of excess stock ocurred during the mini-recession year of 1980, when sales for the economy overall were sluggish. Generally, "work-in-process" and "materials" together account for 77-80% of the total value of inventories. But this share has fallen to about 72-73% in recent years, with the remaining 26-28% attributable to "finished products".

New Capital Expenditures, or investment by office machinery producers, has surpassed $200 million in only four years since 1967. Manufacturers invested this much for the first time in 1980--$221 million. Investment was cut 8.7% in 1985, but still remained strong at $256 million. The peak investment year was 1984, when office machinery producers spent $281 million. By 1985, 88% of these dollars were allocated for new machinery & equipment, versus approximately 12% for "structures & additions to physical plants". Apparently, back in 1975 companies were spending more to construct new facilities (bricks & mortar), since 27% of capital investment was slated for new structures and 73% for new machinery. Strong capital investment in recent years signals that producers in this industry feel confident about the future, and are planning for it via increased automation to become more efficient.

Capital expenditures represented a peak 6.45% of industry shipments during 1978. In this same year these dollars also represented a peak 20.5% of the industry's fixed assets. As recently as 1984 capital spending was at its second highest level ever, representing 6.31% of sales and 18.7% of fixed assets. In 1984, capital spending did reach a peak 11.8% of value added by manufacture. For 1985, spending relative to sales, fixed assets, and value added did come down to more historical levels. Ten-year averages from 1976-85 for capital spending are as follows: 4.94% of sales, 16% of fixed assets, and 8.08% of value added.

THE OFFICE MACHINERY INDUSTRY
INVENTORY TRENDS

	VALUE OF YEAR-END INVENTORIES	ANNUAL % CHANGE	PERCENT OF TOTAL: FINISHED PRODUCTS	WORK-IN-PROCESS	MTLS., SUPPLIES, FUELS, ETC.
1967	$251.9				
1972	245.4				
1973	318.3	29.7			
1974	430.4	35.2			
1975	432.6	0.5	20.6	62	17.4
1976	433.2	0.1	22.3	61.3	16.4
1977	575.3	32.8	18.8	60.6	20.6
1978	696.8	21.1	19.5	59.4	21.1
1979	858.3	23.2	21.9	54.4	23.6
1980	1,054.3	22.8	21.6	52.2	26.3
1981	957.7	-9.2	27.3	41.4	31.4
1982	1,089.1	13.7	26.6	40.8	32.6
1983	1,035.6	-5	28.8	39.6	31.6
1984	1,104.2	6.6	28.5	44.5	27.1
1985	1,226.8	11.1	29.1	46.1	24.8

NA - DATA NOT AVAILABLE

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

INVENTORY/SHIPMENTS RATIO

(Derived By Dividing Year-End Inventories
By Average Monthly Shipments)

1967	2.69
1972	2.27
1973	2.41
1974	2.76
1975	2.9
1976	2.59
1977	2.54
1978	2.78
1979	3.07
1980	3.33
1981	2.91
1982	3.07
1983	2.86
1984	2.98
1985	2.73

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFAC
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

CAPITAL INVESTMENT TRENDS
($ MILLIONS)

	TOTAL NEW CAPITAL INVESTMENT	ANNUAL % CHANGE	NEW STRUCTURES & ADDITIONS TO PLANT (PERCENT OF TOTAL)	NEW MACHY. & EQUIP.
1967	$37.9			
1972	49.6	6.2		
1973	45.1	-9.1		
1974	46.4	2.9		
1975	59	27.2	27.3	72.9
1976	70.1	18.8	24.1	75.7
1977	111.5	59.1	27.9	72.1
1978	193.8	73.8	24.6	75.4
1979	177.7	-8.3	25.8	74.2
1980	221.4	24.6	23.8	76.2
1981	149.3	-32.6	14.7	85.4
1982	198.5	32.9	22.6	77.4
1983	206.7	4.1	NA	NA
1984	281	35.9	13.6	86.3
1985	256.6	-8.7	11.7	88.3

NA - DATA NOT AVAILABLE

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES
MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY
CAPITAL INVESTMENT TRENDS
(Continued)

	NEW CAPITAL INVESTMENT AS % OF INDUSTRY SHIPMENTS	NEW CAPITAL INVESTMENT AS % OF FIXED ASSETS	NEW CAPITAL INVESTMENT AS % OF VALUE ADDED
1967	3.38	10.7	4.75
1972	3.82	10.6	5.7
1973	2.85	7.7	4.26
1974	2.47	8.9	3.59
1975	3.29	10.5	5
1976	3.49	11.1	5.22
1977	4.09	NA	6.59
1978	6.45	20.5	10.01
1979	5.29	16.4	8.33
1980	5.82	18.1	9.48
1981	3.77	13.1	6.06
1982	4.66	15	7.38
1983	4.75	NA	7.82
1984	6.31	18.7	11.79
1985	4.76	15.1	8.15

SOURCE: CENSUS & ANNUAL SURVEYS OF MANUFACTURES,
MARKETDATA CALCULATIONS

This industry's primary products are, of course, office machines. However, ***other*** products are also made by office machinery plants. The **Specialization Ratio** measures the degree to which plants concentrate on their **primary** product. In 1982 this ratio was 81%--meaning that 81% of total industry shipments were of office machinery and 19% of **other** products/miscellaneous revenues. This compares to 76% in 1977 and 79% back in 1972. The **Coverage Ratio** measures the percent of office machinery sales accounted for by **this industry's** plants (versus office machines made by **other** manufacturing sector's plants). The coverage ratio stood at 87% in 1982, about the same as in 1972 and down from 91% in 1977.

Some plants or companies choose to specialize in one or several product areas, and their operating statistics do differ. This section provides a look at five different product lines.....

* Automatic typing/word processing machines
* Duplicating machines
* Mailing, letter-handling, addressing machines
* Standard typewriters & miscellaneous office machines
* Parts for office machines

Findings related to plants specializing in these areas are that in 1982.....

* Plants with 75% or more specialization in a particular area have slightly higher operating costs than the industry overall, invest more in new capital/equipment, have lower sales and value added per employee.

* Sales per employee ranged from $57, 315 for "parts" plants to $150,978 for automatic typing machine plants.

* Total operating costs were lowest at 57.8% of sales for typing/word processing plants and highest at 76.9% for duplicating machine plants.

* Generally, plants with 75% or more specialization had lower payroll and valued added per employee than plants with that product line as primary.

THE OFFICE MACHINERY INDUSTRY

INDUSTRY--PRODUCT ANALYSIS
SPECIALIZATION AND COVERAGE RATIOS
($ MILLIONS)

VALUE OF INDUSTRY SHIPMENTS	1972	1977	1982
TOTAL	$1,296.2	$2,719.7	$4,256.7
PRIMARY PRODUCTS	912.7	1,836.9	3,062.9
SECONDARY PRODUCTS	237.4	589.8	724.4
SPECIALIZATION RATIO* (Primary products as % primary & secondary products)	79	76	81
MISCELLANEOUS RECEIPTS	146.1	293	469.4
VALUE OF PRIMARY PRODUCT SHIPMENTS			
TOTAL, MADE IN ALL INDUSTRIES	$1,064.9	$2,020.3	$3,512.3
MADE IN THIS INDUSTRY	912.7	1,836.9	3,062.9
MADE IN OTHER INDUSTRIES	152.2	183.4	449.4
COVERAGE RATIO* (Percent of product shipments accounted for by THIS industry's plants)	86	91	87

SOURCE: 1982 CENSUS OF MANUFACTURES

THE OFFICE MACHINERY INDUSTRY

MANUFACTURING PLANT STATISTICS
BY INDUSTRY & PRIMARY PRODUCT CLASS SPECIALIZATION

ALL OFFICE MACHINES & TYPEWRITERS

(1982)	ENTIRE INDUSTRY	PLANTS WITH 75% SPECIALIZATION OR MORE
NO. OF MFG. PLANTS	232	202
NO. OF EMPLOYEES (Thous.)	43.7	29.8
PAYROLL ($ Mill.)	$963.7	$655.3
PAYROLL PER EMPLOYEE ($)	$22,052	$21,989
PRODUCTION WORKERS		
NUMBER (Thous.)	21.2	14.6
WAGES ($ Mill.)	$359.50	$245.20
VALUE OF SHIPMTS. ($ Mill.)	$4,256.7	2,616.9
SHIPMTS. PER EMPLOYEE ($)	$97,407	$87,815
VALUE ADDED ($ Mil..)	$2,689.3	$1,685.7
VALUE ADDED PER EMPLOYEE ($)	$61,540	$56,567
MATERIALS COSTS ($ Mill.)	$1,572.7	$924.80
PAYROLL & MTLS. AS % SALES	59.6	60.4
NEW CAPITAL INVEST. ($ MILL.)	$198.5	$145.6
CAPITAL INVESTMENT AS % VALUE ADDED	7.38	8.63

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCUL.

THE OFFICE MACHINERY INDUSTRY

MANUFACTURING PLANT STATISTICS
BY INDUSTRY & PRIMARY PRODUCT CLASS SPECIALIZATION

AUTOMATIC TYPING & WORD PROCESSING MACHINES

(1982)	MFG. PLANTS WITH THIS PRODUCT CLASS PRIMARY
NO. OF MFG. PLANTS	28
NO. OF EMPLOYEES (Thous.)	9.2
PAYROLL ($ Mill.)	$212.4
PAYROLL PER EMPLOYEE ($)	$23,086
PRODUCTION WORKERS	
NUMBER (Thous.)	3.6
WAGES ($ Mill.)	$61.0
VALUE OF SHIPMTS. ($ Mill.)	89,141
SHIPMTS. PER EMPLOYEE ($)	$150,978
VALUE ADDED ($ Mil..)	$820.1
VALUE ADDED PER EMPLOYEE ($)	$89,141
MATERIALS COSTS ($ Mill.)	$591.1
PAYROLL & MTLS. AS % SALES	57.8
NEW CAPITAL INVEST. ($ Mill.)	$75.2
CAPITAL INVEST. AS % VALUE ADDED	9.16

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCUL.

THE OFFICE MACHINERY INDUSTRY

MANUFACTURING PLANT STATISTICS
BY INDUSTRY & PRIMARY PRODUCT CLASS SPECIALIZATION

STANDARD TYPEWRITERS & MISCELL. OFFICE MACHINES

(1982)	PLANTS WITH THIS PRODUCT CLASS PRIMARY	PLANTS WITH 75% OR MORE SPECIALIZATION
NO. OF MFG. PLANTS	51	36
NO. OF EMPLOYEES (Thous.)	18.5	7.1
PAYROLL ($ Mill.)	$417.5	$127.4
PAYROLL PER EMPLOYEE (Dollars)	$22,567	$17,943
PRODUCTION WORKERS:		
NUMBER (Thous.)	10.3	4.9
WAGES ($ Mill.)	$183.8	$72.1
VALUE OF SHIPMENTS ($ Mill.)	$1,678.7	$508.3
SHIPMENTS PER EMPLOYEE ($)	$90,740	$71,591
VALUE ADDED ($ Mill.)	$1,180.4	$307.2
VALUE ADDED PER EPLOYEE ($)	$63,805	$43,267
MATERIALS COSTS ($ Mill.)	$477.3	$171.7
PAYROLL & MTLS. AS % SALES	53.3	58.8
NEW CAPITAL INVEST. ($ MILL.)	$71.0	$25.3
CAPITAL INVEST. AS % VALUE ADDED	6.01	8.23

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCUL.

THE OFFICE MACHINERY INDUSTRY

MANUFACTURING PLANT STATISTICS
BY INDUSTRY & PRIMARY PRODUCT CLASS SPECIALIZATION

MAILING, LETTER HANDLING & ADDRESSING MACHINES

(1982)	PLANTS WITH THIS PRODUCT CLASS PRIMARY	PLANTS WITH 75% OR MORE SPECIALIZATION
NO. OF MFG. PLANTS	24	15
NO. OF EMPLOYEES (Thous.)	8.8	2.6
PAYROLL ($ MIII.)	$199.2	$51.7
PAYROLL PER EMPLOYEE ($)	$22, 636	$19, 884
PRODUCTION WORKERS:		
NUMBER (Thous.)	3.3	1
WAGES ($ MIII.)	$58.9	$19.0
VALUE OF SHIPMENTS ($ MIII.)	$660.9	$171.5
SHIPMENTS PER EMPLOYEE ($)	$75, 102	$65, 961
VALUE ADDED ($ MIII.)	$424.6	$108.9
VALUE ADDED PER EMPLOYEE ($)	$48, 250	$41, 884
MATERIALS COSTS ($ MIII.)	$253.5	$63.3
PAYROLL & MTLS. AS % SALES	68.5	67.1
NEW CAPITAL INVEST. ($ MIII.)	$31.7	NA
CAPITAL INVEST. AS % VALUE ADDED	7.46	—

NA – DATA NOT AVAILABLE

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCUL.

THE OFFICE MACHINERY INDUSTRY

MANUFACTURING PLANT STATISTICS
BY INDUSTRY & PRIMARY PRODUCT CLASS SPECIALIZATION

DUPLICATING MACHINES

(1982)	PLANTS WITH THIS PRODUCT CLASS PRIMARY
NO. OF MFG. PLANTS	8
NO. OF EMPLOYEES (Thous.)	4.2
PAYROLL ($ Mill.)	$90.0
PAYROLL PER EMPLOYEE ($)	$21,428
PRODUCTION WORKERS:	
NUMBER (Thous.)	2
WAGES ($ Mill.)	$31.9
VALUE OF SHIPMENTS ($ Mill.)	$371.9
SHIPMENTS PER EMPLOYEE ($)	$88,547
VALUE ADDED ($ Mill.)	$163.6
VALUE ADDED PER EMPLOYEE ($)	$38,952
MATERIALS COSTS ($ Mill.)	$196.0
PAYROLL & MTLS. AS % SALES	76.9
NEW CAPITAL INVEST. ($ Mill.)	$14.7
CAPITAL INVEST. AS % VALUE ADDED	8.98

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCUL.

THE OFFICE MACHINERY INDUSTRY

MANUFACTURING PLANT STATISTICS
BY INDUSTRY & PRIMARY PRODUCT CLASS SPECIALIZATION

PARTS FOR OFFICE MACHINES

(1982)	PLANTS WITH THIS PRODUCT CLASS PRIMARY
NO. OF MFG. PLANTS	20
NO. OF EMPLOYEES (Thous.)	1.9
PAYROLL ($ Mill.)	$29.9
PAYROLL PER EMPLOYEE (Dollars)	$15,736
PRODUCTION WORKERS:	
NUMBER (Thous.)	1.4
WAGES ($ Mill.)	$16.2
VALUE OF SHIPMENTS ($ Mill.)	$108.9
SHIPMENTS PER EMPLOYEE ($)	$57,315
VALUE ADDED ($ Mill.)	$69.9
VALUE ADDED PER EMPLOYEE ($)	$36,789
MATERIALS COSTS ($ Mill.)	$39.7
PAYROLL & MTLS. AS % SALES	63.9
NEW CAPITAL INVEST. ($ Mill.)	$4.4
CAPITAL INVEST. AS % VALUE ADDED	6.29

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCUL.

OFFICE & COMPUTING MACHINERY PLANTS, BY REGION AND STATE

The 1982 Census of Manufactures provides only very selected data for a small number of states, specifically for office machinery plants covered by SIC code 3579. Most state information is withheld to avoid disclosure of individual company operations.

However, there **is** some more recent information available, for 1984, for the broader category which contains this industry's plants--Office & Computing Machine Plants (SIC group 357). The information in this section comes primarily from individual state books published by the U.S. Department of Commerce: **County Business Patterns.** In these books, **county** data is also available. Statistics of interest here include the number of manufacturing plants by state, and how many workers they employ.

As of 1984, the Commerce Department reported that **2,454** "office & computing machine" manufacturing plants were operational nationwide. 919 of these plants were located in the **West**, mainly in California. 575 were located in the **Northeast** (New England, Mid-Atlantic states). The **Midwest** followed with 373 facilities, and the **Southeast** was next with 266 plants.

These production plants employed a total of **438,542 workers** in 1984. Over 132,000 worked in plants in the West (30% Of total), while 119,000 worked in the Northeast (27% of total). Ten states together accounted for nearly 76% of total employment in 1984, or 332,599 workers. They were, ranked by the most employees: California: 119,766, Massachusetts: 42,703, Minnesota: 34, 572, New York: 31,198, Texas: 25,043, Colorado: 22,504, Florida: 15,739, Arizona: 15,353, New Hampshire: 14,605 and North Carolina: 11,116.

The "average" or typical plant employed 179 workers in 1984, but eight states had levels nearly double this figure: Minnesota, Colorado, Arizona, New Hampshire, North Carolina, Puerto Rico, Idaho and Maines.

As mentioned above, state data from the 1982 Census is sparse, but some plant operating statistics are provided for California, Illinois, and New Jersey.

Continued.....

For example, **California 's** plants generated $319 million in shipments (7.5% of U.S. total), had sales per employee of $86,351 (vs. $97,407 U.S.), had average sales per plant of $8.87 million (vs. $18.35 million), had operating costs of 73.3% of sales, and had capital expenditures that represented 5.73% of sales. Plants located in **Illinois** employed 5,800 workers, had shipments of $468 million (11% of total), had sales per employee of $80,793, had average sales per plant of $18.0 million, and had operating costs of 71.4% of sales. Plants located in **New Jersey** generated $202 million in office machine sales in 1982, had shipments per employee of $77,653, employed 2,600 workers, had average shipments per facility of $9.6 million, had low operating costs of 59.6% of sales, and had capital investment that represented 4.66% of sales.

The County Business Patterns series from the Commerce Department can be an extremely useful source to analyze potential end-users, not only in the manufacturing sector but reailers and wholesalers as well. State and regional sales action plans can be constructed with this information, and SIC code system makes it easy to identify specific markets. It is time consuming, however, to go through all 50 individual state books.

THE OFFICE MACHINERY INDUSTRY

INDUSTRY ECONOMIC STATISTICS FOR SELECTED STATES

	NO. OF MFG. PLANTS	NO. OF EMPLOYEES (Thous.)	PAYROLL ($ Mill.)	PAYROLL PER EMPLOYEE (Dollars)	VALUE OF SHIPMENTS ($ Mill.)
TOTAL U.S.	232	43.7	$963.7	$22,052	$4,256.7
CALIFORNIA	36	3.7	68.1	18,405	319.5
ILLINOIS	26	5.8	129.5	22,327	468.6
NEW JERSEY	21	2.6	53.6	20,615	201.9

	SHIPMTS. PER EMPLOYEE (Dollars)	AVG. SHIPMTS. PER MFG. PLANT ($ Mill.)	MATERIALS COSTS ($ Mill.)	PAYROLL & MTLS. AS % SALES	CAPITAL INVEST. ($ Mill.)
TOTAL U.S.	$97,407	$18.35	$1,572.7	59.6	$198.5
CALIFORNIA	86,351	8.87	166.1	73.3	18.3
ILLINOIS	80,793	18.02	205.1	71.4	19.2
NEW JERSEY	77,653	9.61	92.4	72.3	NA

	CAPITAL INVEST. AS % VALUE ADDED	CAPITAL INVEST. AS % SHIPMENTS
TOTAL U.S.	7.38	4.66
CALIFORNIA	11.74	5.73
ILLINOIS	7.39	4.09
NEW JERSEY	NA	NA

NA - DATA NOT AVAILABLE

NOTE: Much state information has been withheld to avoid disclosing operations of individual firms. The above states are the only ones for which Census data is available.

SOURCE: 1982 CENSUS OF MANUFACTURES, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY

THE TOP 10 STATES, RANKED BY OFFICE & COMPUTING MACHINE PRODUCTION PLANT EMPLOYMENT

1984

STATE	PRODUCTION WORKER EMPLOYMENT	PERCENT OF TOTAL U.S.
CALIFORNIA	119, 766	27.3
MASSACHUSETTS	42, 703	9.7
MINNESOTA	34, 572	7.9
NEW YORK	31, 198	7.1
TEXAS	25, 043	5.7
COLORADO	22, 504	5.1
FLORIDA	15, 739	3.6
ARIZONA	15, 353	3.5
NEW HAMPSHIRE	14, 605	3.3
NORTH CAROLINA	11, 116	2.5
CUMULATIVE 10-STATE TOTAL	332, 599	75.8

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

THE OFFICE MACHINERY INDUSTRY
NUMBER OF OFFICE & COMPUTING MACHINE PRODUCTION PLANTS AND EMPLOYMENT LEVELS, BY STATE & REGION

1984

	NO. OF PLANTS	NO. OF EMPLOYEES	% OF TOTAL U.S. EMPLOYMENT
TOTAL U.S.	2, 454	438, 542	100
NEW ENGLAND	289	70, 319	15.8
MAINE	5	1, 747	0.4
NEW HAMP.	41	14, 605	3.2
VERMONT	5	1, 451	0.33
RHODE ISLAND	10	426	—
CONNECTICUT	49	9, 387	2.1
MID-ATLANTIC	286	48, 876	11.13
NEW YORK	144	31, 198	7.11
NEW JERSEY	83	6, 997	1.59
PENNSYLVANIA	59	10, 681	2.43
EAST NO.CENTRAL	237	19, 565	4.45
OHIO	62	5, 246	1.19
INDIANA	21	897	0.2
ILLINOIS	80	7, 677	1.75
MICHIGAN	52	2, 941	0.67
WISCONSIN	22	2, 804	64
WEST NO.CENTRAL	136	38, 282-41, 77	8.70-9.52
MINNESOTA	88	34, 572	7.88
IOWA	5	500-999	.11-.23
MISSOURI	23	1, 191	0.27
SO. DAKOTA	4	19	—
NEBRASKA	6	1000-2499	.22-.57
KANSAS	10	1000-2499	.22-.57
SOUTH ATLANTIC	229	37, 221-37, 61	8.39
DELAWARE	3	250-499	—
MARYLAND	38	2, 047	0.47
DIST. OF COL.	1	100-249	—

TABLE CONTINUED.....

NUMBER OF OFFICE & COMPUTING MACHINE PRODUCTION PLANTS AND EMPLOYMENT, BY STATE & REGION
1984

TABLE CONTINUED.....

STATE	NO. OF PLANTS	NO. OF EMPLOYEES	% OF TOTAL U.S. EMPLOYMENT
SO. ATLANTIC (CONT.)			
VIRGINIA	36	3,893	0.88
NO. CAROLINA	31	11,116	2.53
SO. CAROLINA	10	1,774	0.4
GEORGIA	39	2,302	0.52
FLORIDA	71	15,739	3.59
EAST SO. CENTRAL	37	7250-13,24	1.58-3.42
KENTUCKY	6	5000-9999	1.14-2.28
TENNESSEE	14	1000-2499	.22-.57
ALABAMA	13	1000-2499	.22-.57
MISSISSIPPI	4	250-499	—
WEST SO. CENTRAL	165	27,583-30,	6.28-6.85
ARKANSAS	3	20-99	—
LOIUSIANA	6	20-99	—
OKLAHOMA	22	2500-4999	.57-1.14
TEXAS	134	25,043	5.71
MOUNTAIN	152	49,110-50,	11.14-11.49
MONTANA	2	0-19	—
IDAHO	7	3,770	0.85
WYOMING	1	100-249	—
COLORADO	59	22,504	5.14
NEW MEXICO	6	1000-2499	.22-.57
ARIZONA	42	15,353	3.5
UTAH	31	6,283	1.43
NEVADA	4	100-249	—
PACIFIC	919	132,516+	30.20+
WASHINGTON	57	6,124	1.39
OREGON	39	6,606	1.51
CALIFORNIA	822	119,766	27.3
HAWAII	1	20-99	—

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

NUMBER OF OFFICE & COMPUTING MACHINE MANUFACTURING PLANTS BY STATE - 1984 (RANKED BY NUMBER OF PLANTS)

STATE	NO. OF PLANTS	NO. OF EMPLOYEES	% TOTAL U.S. EMPLOYMENT	AVG. NO. OF EMPLOYEES PER PLANT
TOTAL U.S.	2,454	438,542	100	179
CA	822	119,766	27.3	146
MA	179	42,703	9.73	239
NY	144	31,198	7.11	217
TX	134	25,043	5.71	187
MN	88	34,572	7.88	393
NJ	83	6,997	1.59	84
IL	80	7,677	1.75	96
FL	71	15,739	3.59	222
OH	62	5,246	1.19	85
CO	59	22,504	5.14	381
PA	59	10,681	2.43	181
WA	57	6,124	1.39	107
MI	52	2,941	0.67	57
CT	49	9,387	2.14	192
AZ	42	15,353	3.5	366
NH	41	14,605	3.2	356
OR	39	6,606	1.51	169
GA	39	2,302	0.52	59
MD	38	2,047	0.47	54
VA	36	3,893	0.88	108
UT	31	6,283	1.43	203
NC	31	11,116	2.53	359
MO	23	1,191	0.27	52
WI	22	2,804	0.64	127
OK	22	2500-4999	.57-1.14	—
IN	21	897	0.2	43
PR	17	7,133	1.63	420
TN	14	1000-2499	.22-.57	—
AL	13	1000-2499	.22-.57	—
SC	10	1,774	0.4	177
RI	10	426	—	43

TABLE CONTINUED.....

SOURCE: U.S. DEPT. OF COMMERCE, MARKETDATA CALCULATIONS

NUMBER OF OFFICE & COMPUTING MACHINE MANUFACTURING PLANTS BY STATE - 1984 (RANKED BY NUMBER OF PLANTS)

TABLE CONTINUED.....

STATE	NO. OF PLANTS	NO. OF EMPLOYEES	% TOTAL U.S. EMPLOYMENT	AVG. NO. OF EMPLOYEES PER PLANT
KS	10	1000-2499	.22-.57	—
ID	7	3,770	0.85	539
LA	6	20-99	—	—
KY	6	5000-9999	1.14-2.28	—
NE	6	1000-2499	.22-.57	—
NM	6	100-2499	.22-.57	—
ME	5	1,747	0.4	349
IA	5	500-999	0.11-.23	—
VT	5	1,451	0.33	290
SD	4	19	—	—
NV	4	100-249	—	—
MS	4	250-499	—	—
DE	3	250-499	—	—
AR	3	20-99	—	—
MT	2	0-19	—	—
WY	1	100-249	—	—
HI	1	20-99	—	—
DC	1	100-249	—	—

COMPETITOR PROFILES

The following section contains information pertaining to the larger, leading companies that produce office machinery. "Company Profiles" have been constructed for these selected firms, encompassing a variety of financial, marketing, economic, and product line information, and recent developments, from an array of sources such as: company catalogs, advertisements, Dun & Bradstreet, Standard & Poors, Value Line Investment Survey, directories, etc. Quality of information varies by whether the firm is publicly or privately-held, which determines the amount and availablitiy of good information.

ALLEGHENY PAPER SHREDDERS

Allegheny is a Delmont, PA manufacturer of a complete line of paper shredders, from office models to 100 HP. It operates a 58,000 square foot facility. Models produced include: the model 10-36, 15-15, and 12-15 (for shredding computer printouts), the MicroDisintegrator Model 1 (designed for microfiche & top secret correspondence, meets D.O.D. specs), J Series (25, 35, 45, 55 sheet capacities, shreds all mtls.), model B-175 hydraulic baler, CJ-65 economical conveyor-fed Wagner Z-18-300 large volume conveyor-fed unit (shreds 1-3 tons of mtl./hr., including 3-ring binders, corrugated materials, the Z-1000 (with 40 HO motor, shreds 3-5 tons/hr). Allegheny also offers 2 and 4-bin "joggers" and rebuilt Cummins perforators.

BELL & HOWELL

Bell & Howell's Phillipsburg Division in Evanston, IL produces a variety of mailroom machines, such as.....

DocuMail RA-9C Automated Mail Sorting System: An automatic, multi-font optical character recognition and/or electronic bar code recognition system that is modular in design, for customizing incomin, internal and outgoing sorting. It assists companies to pre-sort mail for postal sevice discounts, identifies important mail using the U.S.P.S. Zip + 4 Program. It processes up to 32,000 envelopes per hour, depending on media size. A CRT displays operational information.

Mailweigh 600 Envelope Weighing System: Is claimed to be the only vloume mail weigher and sorter that automatically processes up to 6000 envelopes/hr. into 5 different postage categories. It sorts and weighs outgoing mail for correct application of postage, avoiding overpayment. It uses an electronic scale and microprocessors to weigh envelopes to 1/40

Continued.....

th of an ounce, and handles sealed or unsealed envelopes.

Mastermailer II Inserter System: This machinery is suited to handle a wide range of mailing pieces, such as annaul reports/proxy statements, catalogs, manuals, letters and promotional brochures, invoices and monthly statements. It has speeds of processing up to 6300 cycles/hr., and is also available with a postage meter. It is available in 4,6 or 8 station configurations.

CUMMINS-ALLISON

Cummins-Allison, headquartered in Mt. Prospect, IL, employs 490 workers. Dun & Bradstreet reports that the firm has 115 workers at this plant working on office machinery products classified under SIC code 3579 (miscellaneous office machines- *other* than computer printer/plotters, calculators, FAX, copiers). The firm is a producer and marketer of office machines, coin and currency handling and packaging equipment, and coupon systems. About 70% of revenues are derived from its manufactured product lines and 30% via private label OEM products.

The company sells throughout 36 states in the U.S. via its Factory Branch Sales & Service Organization. It is privately held, was founded in 1921, and was reported to have had sales of $35 million in 1986. Its three main product lines include:

* Office products
* Automated Money Systems
* Coupon Payment Systems

Its line of office machines includes:

* Check signers & endorsers
* Perforators--over 40 models (installed population of 23,000)
* Paper shredders--9 models of varying capacities
* Tallyprinters

The Office Products line is comprised of paper handling and marking machines, which function primarily to improve document security and control and clerical productivity and efficiency. Typical applications include cancelling invoices and EDP documents, marking of purchase orders

Continued.....

and punch cards, and automatic signing and endorsing of checks and the destruction of confidential reports and correspondence. Major customers include manufacturers, government, insurance, finance, retail, and institutuions.

Since the sale of its Data Systems Division in 1980, the company has directed resources to providing products to new markets, and establishing greater shares of existing markets. Recently it initiated a program to expand distribution beyond North America to cover worldwide markets.

Much of Europe and England are viewed as key markets, as the impact of western civilization technologies create document processing and handling applications and money systems requirements not unlike those of North America.

Cummins-Allison is expanding product lines through exclusive distributor agreements or new product development and manufacture. In the past few years it has.....

* Developed and introduced the Model CA-701 JetSort Coin Sorter/Counter
* Introduced the Model CA-4000 Currency Counters and Model CA-135 and CA-135XD Coinn Counter/Packagers.
* Introduced the Model CA-500 and CA-501 Paper Shredders to the U.S. market.

Cummins-Allison is about to release its new companion JetSort Model CA-750, designed for decentralized and branch coin processing operations. Further expansion of both the Automated Money Systems and Office Products lines will likely accelerate in the next few years.

HARRIS/LANIER CORP.

Harris Corp. is a $2.2 billion manufacturer of sophisticated communications and information processing equipment, office equipment, and semiconductors. Government sales accounted for 49% of the total in fiscal 1986. As of late October, 1986 Standard & Poor's expected another healthy earnings gain for the firm's Lanier Information Systems group.

Lanier Business Products produces computers, workstations, word processors, peripherals, software, clustered local networks, dictation equipment (of which it dominates the market along with Dictaphone),

Continued.....

small PBXs, and through a joint venture distributes copiers and facsimile machines. Lanier accounted for 19% of total Harris sales and 41% of profits during fiscal 1986. Dun & Bradstreet reports that Lanier employed 5,100 workers at the Atlanta, GA plant in 1986, generating sales of $409 million.

LATHEM TIME RECORDER CO.

Lathem was established in 1919, and is headquartered in Atlanta, GA. The company manufactures a full line of manual and automated time recorders. Models are available with a choice of a large clock face or digital readout, for job or payroll timekeeping. Lathem offers the following main product lines.....

* Program timers
* Time stamp/numberers (2100, 4000, 8000series)
* Watchman clocks (Chron-a-Guard)--totally electronic
* Heavy duty wall clocks

MARTIN YALE INDUSTRIES

Martin Yale, headquartered in Chicago, makes the following products (and prices, effective 1/2/87).....

* Folding machines (model 9520, 1217A Foldrite, 1501 CV-& Auto Folder, Seventeen Mark VI, friction & air feed)
* Collators (MC-6 $159)
* Decollators/bursters (table top models $469-1,255)
* Paper Shredders (Ultrashred $595-895)
* Checksigners ($1,095-1,125)
* Automatic electric staplers (model 600)
* Electric letter opener (model 2001)

Continued.....

MICHAEL BUSINESS MACHINES

MBM, headquartered in Maspeth, Queens, NY, offers a wide variety of office machines, including bursters and decollators, paper drills, folding machines, binders, shredders, etc.

The Table Top Burster (S-5130) is used for separating computer printouts and tractor-feed continuous paper. It is designed for heavy duty jobs in an office where space is at a premium, and bursts up to 4-part carbonless or 3-part carbon forms. The Model D-922 A-frame Mini-Decollator is designed for rapid separation of both carbonless and carbon interleaved forms. Both units are small, portable and lightweight.

The Fastfold 17 Jet-Speed Super Folder folds 18,000 sheets/hr. and is used for in-plant shops, copy centers, and office duplicating. It adjusts for non-standard paper sizes up to 22" long and 113/4" wide. Michael Business Machines also sells: Bookletmaker 1000E and 3000E binders that staple collated copies into a booklet, Destroyit paper shredders, and checksigner/imprinters.

OLIVETTI

Olivetti is an Italian computer and office equipment company, now thriving under the leadership of Carlo DeBenedetti. He has bought stakes in 12 companies since January 1986, since opportunities in Italy are limited, and in eight years as chief executive turned an unprofitable typewriter maker into Europe's number one firm in office automation.

In Germany, Olivetti paid an estimated $80 million for the ailing office-equipment maker Triumph Adler, booosting Olivetti's share of the German typewriter market from 5% to 29% in a single action. The company has evolved into a conglomerate, with holdings in insurance, auto parts, electronics and food as well.

PITNEY BOWES, INC.

Pitney Bowes, Inc. is the world's largest manufacturer of postage meters and mailing equipment. It also sells copiers and facsimile machines. Dictaphone Corporation, acquired in May, 1979, is a producer of of dictating equipment, and shares most of the market with Harris/Lanier.

Continued.....

Foreign operations account for 17% of total sales, and the company employs 29,165 workers. Dun & Bradstreet reported that Pitney Bowes employed 3,900 workers at its Stamford, CT plant and another 100 via Dictaphone at the Rye, NY facility.

Value Line reports that measures taken during 1986 have improved the company's traditional strengths in technology, direct sales, and customer service. The firm added a record 50 new products, with such innovative features as: postage by phone, microprocessor-controlled mail-handling, computer-to-facsimile interface capability, and integration of telephone, dictation, message, and computer functions in a single desktop communications system. Almost as many new products are planned for this year.

The company has expanded sales rep training programs, and new management information systems have shortened customer response time. These are measures taken to fight a perceived complacency as the market leader, which had led to a loss of market share to smaller, more aggressive competitors. Value Line is estimating a 14% earnings gain in 1987, and 3-5 year capital gains potential is said to be about average. Following is a breakdown of 1980-86 sales and net profits.....

	Sales ($ Mill.)	Net Profit	Net Prof. Margin
1980	$1257.3	$75.1	6.0%
1981	1414.4	69.5	4.9
1982	1455.3	83.1	5.7
1983	1606.5	117.1	7.3
1984	1732.1	138.2	8.0
1985	1831.8	144.5	7.9
1986	1966.7	185.0	8.4

SAVIN CORPORATION

Savin sells and rents office copiers and supplies and grants licenses to sell products of its design throughout the world. Sales mix is brken down as follows: copiers--83%, rentals--17%. The company manufactures copier accessories, with copiers made by the Ricoh Co. The firm has 1,950 employees.

Continued.....

Value Line reports that there was a 20% decline in operating costs and a 25% cut in interest expenses attributable to the business and financial restructuring instituted in late 1985. Further progress will depend on the more difficult task of expanding sales. "Caught in the crossfire of the U.S.-Japan trade war, the copier business is languishing. Savin, which distributes Japanese-made copiers in the U.S., began to lose market share early in 1986, as Japanese manufacturers increasingly attempted to penetrate the U.S. market directly."

Savin receives royalties from its patented liqid toner imaging technology for applications outside the office copier market. It renewed or amended several licensing agreements related to this business in 1986-87, which should prove beneficial over the long term. But, this will not be sufficient to reverse the 40% decline in royalties Savin experienced in 1986.

Following are sales and net profit (loss) figures for 1980-86:

	Sales ($ Mill.)	Net Profit ($ Mill.)
1980	$434.8	($2.2) loss
1981	464.5	(32.2)
1982	415.9	(8.5)
1983	385.5	(58.9)
1984	274.6	(14.9)
1985	410.0	(52.8)
1986	382.7	(11.1)

THE STAPLEX CO.

Headquartered in Brooklyn, NY, this company offers over 75 different models of electric staplers that are used to staple paper, cardboard, cloth, film, plastics, foil, leather and other materials. Following are some of its main product lines.....

* SJM-1 Little Giant Electric Stapler
* MS Mini stapler
* S-54 Std. elctric stapler
* S-54H Heavy capacity elec stapler, S-54L dual capacity
* S-620 double header, S-630 triple header
* S-RD thick wire stapler

Continued.....

* S-700-1 Long Reach stapler
* ST Executive electric stapler

Staplex also sells the Accuslitter electric mail opener. All models are made in the U.S., and most are available with Finger Trip or Foot Switch activation, with 110-125 volts or 220-240 volts AC.

XEROX CORP.

Xerox is the leading U.S. manufacturer of copying/duplicating equipment and supplies. It also produces office automation equipment, and rentals provide 24% of total revenues, according to Value Line. The firm has 100,400 employees.

Economic trends are giving the copier business an edge. Japanese firms, which already dominate the personal copier market, have been aggressively attacking the more profitable high-volume segment. The sharp appreciation of the yen relative to the dollar, however, has forced the Japanese to raise prices several times in the past year, hurting their ability to penetrate the U.S. market. Also, Common Market duties on Japanese copier imports should improve Xerox's position in Europe. This, together with Xerox's popular 10 Series, should support strong gains for reprographics in the coming years.

Xerox has introduced probably the broadest variety of information systems products on the market, over the past two years. But, customer response has been lukewarm, and the office automation group has made little progress toward breaking even. The company has a strong presence, though, in laser printers and executive workstations. And, the rapid expansion of electronic publishing should be a natural path to growth for Xerox. Following are sales and profit figures for 1980-86.....

	Sales ($ Mill.)	Net Profit ($ Mill.)	Profit Margin
1980	$8196.5	$619.2	7.6%
1981	8691.0	598.2	6.9
1982	8455.6	367.7	4.4
1983	8463.5	459.2	5.4
1984	8791.6	368.6	4.2
1985	8732.1	380.5	4.4
1986	9355.0	488.0	5.2

THE OFFICE MACHINERY INDUSTRY

LEADING OFFICE MACHINERY COMPANIES, RANKED BY EMPLOYMENT AND SALES - 1986

(Primary SIC Code = 3579)

COMPANY/ADDRESS	NO. OF EMPLOYEES AT THIS LOCATION	% OF TOTAL INDUSTRY EMPLOYMENT	SALES ($ Mill.)
Lanier Business Products 1700 Chantilly Dr. N.E. Atlanta, GA 30324 (404)329-8000	5,100	13.1	$409
Pitney Bowes, Inc. Walter H. Wheeler Jr. Dr. Stamford, CT 06926 (203) 356-5000	3,900	10.1	1,730
A B Dick Co. Inc. DE 5700 W. Touhy Chicago, IL 60648 (312) 763-1900	1,700	4.4	330
Simplex Time Recorder Co. 1 Simplex Plaza Gardner, MA 01440 (617) 632-2500	1,400	3.6	200
General Binding Corp. DE One GBC Plaza Northbrook, IL 60062 (312) 272-3700	500	1.3	163
Data Card Corp. 11111 Bren Rd. W. Minneapolis, MN 55440 (612) 933-1223	400	1.0	103
F M E Corp. 30955 Huntwood Ave. Hayward, CA 94544-7084 (415) 489-6800	400	1.0	70.2
Gestetner Corp. Gestetner Park Yonkers, NY 10703 (914) 968-6666	300	0.8	100

LEADING OFFICE MACHINERY COMPANIES, RANKED BY EMPLOYMENT & SALES - 1986 (Contined)

COMPANY/ADDRESS	NO. OF EMPLOYEES AT THIS LOCATION	% OF TOTAL INDUSTRY EMPLOYMENT	SALES ($ Mill.)
Cummins-Allison Corp. 891 Feehanville Dr. Mt. Prospect, IL 60056 (312) 299-9550	115	0.3	$35.1
Dictaphone Corp 120 Old Post Rd. Rye, NY 10580 (914) 967-7300	100	0.3	200
Hunt Mfg. Co. 230 S. Broad St. Philadelphia, PA 19102 (215) 732-7700	65	0.2	96.6
Hale Technology Corp. 150 Stockton St. San Francisco, CA 94108 (415) 981-5440	10	---	42
Cumulative Total:	13,990	36.1	$3,478.9

SOURCE: DUN'S BUSINESS RANKINGS, 1986

KEY:

1.	OFFICE MACHINES	5.	PENCIL SHARPENERS, CHECK SIGNERS, STAPLERS, PERFORATORS, HOLE PUNCHERS
2.	TIME STAMPERS/RECORDERS		
3.	SHREDDERS	6.	MAILROOM MACHINERY
4.	FACSIMILE MACHINES	7.	COMPUTER & BUSINESS EQUIP.

Acroprint Time Records Co.
5640 Departure Drive, Raleigh, NC 27604 (2)

Addmaster Corp.
2000 S. Myrtle Avenue, Monrovia, CA 91016 (1)

Addressograph Farrington Inc.
Pond Street, Randolph, MA 02368 (1)

Adler-Royal Business Machines, Inc.
1600 Route 22 PO Box 1597, Union, NJ 07083 (7)

Allegheny Paper Shredder Corp.
PO Box Drawer E, Delmont, PA 15626 (3)

AM International, Inc., Multigraphics Division
1800 West Central Road, Mt. Prospect, IL 60056 (7)

Amano America Mfg.
3070 East Ceena Court, Anaheim, CA 92806 (1)

Amdahl Corporation
1250 East Arques Avenue, Sunnyvale, CA 94088 (7)

AMP Incorporated
PO Box 3608, Harrisburg, PA 17105 (7)

Amsco
PO Box 224108, Dallas, TX 75222 (6)

Apple Computer, Inc.
20525 Mariani Avenue, Cupertino, CA 95014 (7)

AT&T
550 Madison Avenue, New York, NY 10022 (7)

Automecha Ltd.
Box 660, Oxford, NY 13830 (6)

Bartizan Corp.
217 Riverdale Avenue, Yonkers, NY 10705 (1)

Bell & Howell, Phillipsburg Division
6800 McCormick Road, Chicago, IL 60645 (7)

Bell & Howell Co.
5215 Old Orchard Road, Skokie, IL 60077 (1)

Better Methods Inc.
650 New Country Road, Secaucus, NJ 07094 (1)

Brandt Inc.
705 S. 12th Street, Watertown, WI 53094 (1)

Burroughs Corporation
Burroughs Place, Detroit, MI 48232 (7)

CPT Corp.
8100 Mitchell Road, Minneapolis, MN 55440 (1)

Canon Business Machines Inc.
3191 Redhill Avenue, Costa Mesa, CA 92626 (1)

Canon U.S.A., Facsimile Div.
PO Box 5210, Clifton, NJ 07015 (4)

Check Technology Corp.
1284 Corporate Center Drive, St. Paul, MN 55121 (1)

Cincinnati Time
1733 Central Avenue, Cincinnati, OH 45214 (2)

Coastal Data Products
6135 NW 167 Street, Hialeah, FL 33015 (2)

Colman Electronics Products
1017 NE 3rd, Amarillo, TX 79107 (1)

Compaq Computer Corporation
20555 FM 149, Houston, TX 77070 (7)

Consolidated Engineering & Mfg. Corp.
1515 Melrose Lane, Forest Hill, MD 21050 (1)

Control Data Corporation
8100 34th Avenue S., Minneapolis, MN 55420 (7)

Cummins-Allison Corp.
891 Feehanville Drive, Mt. Prospect, IL 60056 (1)

Data Card Corp.
11111 Bren Road W., Minneapolis, MN 55440 (1)

Datatech Inc.
Union Hill & Clapper Roads, Union Hill Industrial Park,
W. Conshohocken, PA 19428 (3/6)

Dennison Mfg. Co.
300 Howard Street, Framingham, MA 01701 (1)

A. B. Dick Co., Inc.
5700 W. Touhy, Chicago, IL 60648 (1)

Dictaphone Corp.
120 Old Post Road, Rye, NY 10580 (1)

Digital Equipment Corporation
146 Main Street, Maynard, MA 01754 (7)

Dispensa-Matic
1335 Convention Plaza, St. Louis, MO 63103 (6)

EMF Corp.
15110 NE 95th, Redmond, WA 98052 (1)

Eastman Kodak Company, Business Systems Markets Division
343 State Street, Rochester, NY 14650 (1/7)

Escalade Inc.
817 Maxwell Avenue, Evansville, IN 47711 (1)

Esselte Business Systems Inc.
71 Clinton Road, Garden City, NY 11530 (1)

FME Corp.
30955 Huntwood Avenue, Hayward, CA 94544 (1)

Fujitsu Imaging Systems of America
Corporate Drive Commerce Park, Danbury, CT 06810 (4)

General Binding Corp.
One GBC Plaza, Northbrook, IL 60062 (1)

Gentry Mfg. Corp.
180 Oser Avenue, Hauppauge, NY 11788 (1)

Gestetner Corp.
Gestetner Park, Yonkers, NY 10703 (1)

Gradco Systems Inc.
3421 Segerstrom Avenue, Santa Ana, CA 92704 (1)

Harris Corp.
1025 W. NASA Blvd., Melbourne, FL 32919 (1)

Harris-Lanier
1700 Chantilly Drive N.E., Atlanta, GA 30324 (7)

The Hedman Co.
1158 W. Armitage Avenue, Chicago, IL 60614 (3)

Hewlett-Packard Co.
3000 Hanover Street, Palo Alto, CA 94304 (7)

Heyer, Inc.
1850 S. Kostner Avenue, Chicago, IL 60623 (1/6)

Honeywell Information Systems, Inc.
Honeywell Plaza, Minneapolis, MN 55408 (7)

Hunt Mfg. Co.
230 S. Broad Street, Philadelphia, PA 19102 (1)

IBM Corporation
2000 Purchase Street, Purchase, NY 10577 (7)

ICL, Inc.
777 Long Ridge Road, Stamford, CT 06902 (7)

Infodetics Corp.
1341 S. Caludina, Anaheim, CA 92805 (1)

Information Handling Services
15 Inverness Way E., Englewood, CO 80150 (7)

International Business Machines
Old Orchard Road, Armonk, NY 10504 (1)

International Mailing Systems
19 Forest Parkway Dept. PKD, Shelton, CT 06484 (6)

Konica Business Machines U.S.A., Inc.
500 Day Hill Road, Windson, CT 06095 (7)

Kronos Inc.
62 Fourth Avenue, Waltham, MA 02154 (2)

Lathem Time Recorder Co.
276 Selig Drive S.W., Atlanta, GA 30378 (2)

Marathon Office Supply Inc.
10323 Santa Monica Blvd., Los Angeles, CA 90025 (1)

Martin Yale Industries
500 N. Spaulding Avenue, Chicago, IL 60624 (3/5)

Mason Marking Systems Corp.
616 W. 24th Street, Norfolk, VA 23501 (1)

Master Addressor Co.
7506 W. 27th Street, Minneapolis, MN 55426 (6)

Master Products Mfg. Co.
3481 E. 14th Street, Los Angeles, CA 90023 (1)

McGill Metal Products Co., Inc.
142 E. Prairie Street, Marengo, IL 60152 (1)

Michael Business Machines
54-21 48th Street, Maspeth, NY 11378 (3)

Micr-Shield Co., Inc.
4011 N. Black Canyon Highway, Phoenix, AZ 85015 (1)

Micro Switch, A Honeywell Division
11 West Spring Street, Freeport, IL 61032 (7)

3M
PO Box 32, ML 1397, St. Paul, MN 55144 (7)

NBI Inc.
3450 Mitchell Lane, Boulder, CO 80301 (1)

NCR Corporation
1700 S. Patterson Blvd., Dayton, OH 45479 (7)

National Presort Inc.
2233 Vantage, Dallas, TX 75207 (1)

National Transaction Network
10268 Bach Blvd., St. Louis, MO 63132 (1)

Omnifax Telantograph Corp.
8700 Bellanca Avenue, PO Box 54014, Los Angeles, CA 90045 (4)

Panasonic Industrial Company
One Panasonic Way, Secaucus, NJ 07094 (7)

Paymaster Corp.
1811 W. Winnemac Avenue, Chicago, IL 60640 (1)

Philips Business Systems, Inc., A North American Philips Company
810 Woodbury Road, Woodbury, NY 11797 (7)

Pitney Bowes Inc.
Walter H. Wheeler Jr. Drive, Stamford, CT 06926 (1)

Polaroid Corp.
549 Technology Square, Cambridge, MA 02139 (1)

Prime Computer, Inc.
Prime Park, Natick, MA 01760 (7)

Quixote Corp.
One E. Wacker Drive, Chicago, IL 60601 (1)

Rapidprint Inc.
2055 S. Main Street, Middletown, CT 06457 (2)

Realist Inc.
N93 W16288 Megal Drive, Menomonee Falls, WI 53051 (1)

Recognition Equipment Inc.
2701 E. Grauwyler Road, Irving, TX 75061 (1)

Rioch Electronics Inc.
2320 Red Hill Avenue, Santa Ana, CA 92705 (1)

Rolodex Corp
245 Secaucus Road, Secaucus, NJ 07094 (5)

Sanders Associates, Inc.
Daniel Webster Highway S., Nashua, NH 03061 (7)

Savin Corp.
9 W. Broad Street, Stamford, CT 06904 (1)

Scriptomatic Inc.
2030 Upland Way, Philadelphia, PA 19131 (1)

Signode Industries Inc.
3600 W. Lake Street, Glenview, IL 60025 (1)

Simplex Time Recorder Co.
1 Simplex Plaza, Gardner, MA 01440 (1)

Smith Roller Corp.
611 Duggan Avenue, Azusa, CA 91702 (1)

Sony Corporation of America
9 West 57th Street, New York, NY 10019 (7)

Standard Register Co.
626 Albany Street, Dayton, OH 45401 (1)

The Staplex Co.
775 Fifth Avenue, Brooklyn, NY 11232 (5)

Stromberg Products
446 Blake Street, New Haven, CT 06515 (2)

Swingline Inc.
32-00 Skillman Avenue, Long Island City, NY 11101 (3/6)

TAB Products Co.
PO Box 10269, Palo Alto, CA 94303 (6)

Tech Time Inc.
917 South Tamiami, Nokomis, FL 33555 (2)

Tektronix, Inc., Information Display Division
PO Box 500, Beaverton, OR 97077 (7)

Tempustech Inc.
3901 Pell Circle, Sacramento, CA 95838 (1)

Texas Instruments Inc.
PO Box 2909, Austin, TX 78769 (7)

Trans-Lux Corp.
110 Richards Avenue, Norwalk, CT 06854 (4)

Tru Point Products Inc.
140 Baker Street, Coloma, MI 49038 (1)

UARCO Incorporated
West Country Line Road, Barrington, IL 60010 (7)

Velo-Bind Inc.
650 Almanor Avenue, Sunnyvale, CA 94086 (1)

Weber Marking Systems Inc.
711 W. Algonquin Road, Arlington Heights, IL 60005 (1)

Wilson Jones
6150 Touhy Avenue, Chicago, IL 60648 (3)

Xerox Corporation
800 Long Ridge Road, PO Box 1600, Stamford, CT 06904 (1/7)

Ziyad Inc.
100 Ford Road, Denville, NJ 07834 (1)

SOURCE: 1986 DUN & BRADSTREET MILLION DOLLAR DIRECTORY, MANU-- FACTURER PRODUCT LITERATURE, CATALOGS